

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LIX.

SATURDAY, SEPTEMBER 19, 1891.

No. 12.

ORIGINAL ARTICLES.

ON THE DIAGNOSTIC VALUE OF LAVERAN'S ORGANISMS.¹

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WHILE there have been many papers written upon the nature of the organisms first described by Laveran, but few treat of their clinical importance. Osler,² Carter,³ and one or two others, have, however, considered this part of the subject.

A year ago I reported an interesting case of malarial fever bearing on this point, but since that time so many cases have come under observation in which the examination of the blood was of the greatest importance in the diagnosis, that I wish to again bring the subject forward. It will be well to study a few of these cases before going further:

CASE I.—L. B., colored, twenty-five years of age, was admitted to the hospital December 11, 1889, complaining of cough, soreness in the chest, pain in the abdomen, and fever. He had been quite well up to the last week in November, when one day he felt chilly, but had no definite chill; later he became feverish, felt "good for nothing" and tired, and thought he had "taken a heavy cold." His fever continued, and, like the cough, was worse at night. On the 9th of December there was slight epistaxis. He had no chills and no diarrhea, but some abdominal pain, headache and loss of appetite. He was first seen in the dispensary, where it was noted that "his appearance is that of a man with typhoid." The tongue was swollen, dry, and furred; the skin dry and hot; abdomen slightly tender; spleen moderately enlarged; temperature 101.8° F. The blood contained innumerable intra-cellular and extra-cellular bodies and crescents; and when quinine was administered convalescence was immediate.

CASE II.—G. B., a German, eighteen years of age, admitted January 9, 1890; had been ill fourteen days, with continued fever, headache, loss of appetite, but no chills. Examination on admission revealed a condition similar to that in the preceding case: furred tongue, tender abdomen, enlarged spleen, and a temperature of 102° F. It being the fifteenth day of the disease, the absence of spots

was not indicative one way or the other. The organisms were found to be abundant.

CASE III.—W. H., an Englishman, twenty-nine years of age, applied at the dispensary September 2, 1890. He seemed in great pain, was apparently very ill, and unable to give an account of himself, save that he had not been well for some days. His tongue was coated and tended to dryness. The pulse was 108 and small, the temperature 104.2° F. There was tenderness in the right iliac fossa, the spleen was much enlarged, and there were râles at both bases. He vomited freely while waiting to be taken to the ward.

His whole appearance was so typical of typhoid that, at the same time a blood-slide was taken, a short while after admission, the order was given to prepare the patient for bathing. To the great surprise of the physician, however, the blood was found to contain a considerable number of crescents. In the meantime the man's head had been closely shaven, preparatory to bathing. During his stay in the hospital his case served to impress everyone most forcibly with the necessity and value of the means of diagnosis adopted. The day after admission he was able to give a history of his illness—which was one of chills and fever of some weeks' duration. Under quinine he made a rapid recovery.

In each of these three cases, from the history and the condition of the patient when first seen, it would have been impossible to make a differential diagnosis between malarial and typhoid fever. Of course, in time, the intermittent character of the fever, which was present in each case, coupled with the therapeutic test of quinine and the absence of Ehrlich's reaction, would have been quite sufficient.

It must be remembered that the intermissions of the fever may only be demonstrated by frequent temperature observations, as was exemplified in Case I. Hence the necessity of such observations.

Even this means of diagnosis may be absent, as is shown in the next case.

CASE IV.—E. P., a colored boy, nineteen years of age, was admitted August 9, 1889. He gave a history of illness of nine days' duration, with headache, backache and pain in the stomach—symptoms of which he complained at the time of admission. On being further questioned he said that he had had no chills; his stools had been watery; he had had constant fever and headache; had vomited on two occasions, and had had nose-bleeding on one day. He was dull; the skin was hot and dry; and the tongue furred. There was gurgling in the right iliac fossa. The spleen extended from the seventh rib to the costal margin. The temperature was

¹ Read before the Clinical Society of Baltimore, November 21, 1890.

² Transactions of the Path. Soc. of Phila., vol. xii.; British Med. Journal, March 12, 1887; The Johns Hopkins Hospital Bulletin, vol. i., No. 1.

³ Referred to by Osler, loc. cit.

103.8°, and, though it was taken every four hours, did not reach the normal for four days. There were no chills while in the hospital, nor was there any sweating.

The blood was found to contain a very large number of crescents, extra-cellular bodies and free blood-pigment.

The case is a striking one. All the symptoms and signs were most suggestive of typhoid. In making a differential diagnosis, the therapeutic test and the absence of Ehrlich's reaction would have had to be solely relied upon—the one demanding time, the other far more trouble, apparatus and time than the examination of the blood. Quinine was purposely withheld for several days, as is the custom, in order to observe the course of the disease and to study the organisms. When given, the convalescence was immediate.

CASE V.—C. M., fifty-two years of age, was admitted October 27, 1889, on account of a severe attack of acute colitis. The temperature, which on admission had been 100° F., reached the normal line on the seventh day, though in other respects his condition was unimproved. On the following day there was a sudden rise of temperature to 103.5° F., preceded by chilly feelings. No history of malarial infection could be obtained, but numerous intra-cellular and extra-cellular bodies were found in the blood.

CASE VI.—G. C., fourteen years of age, was admitted November 16, 1889, for epilepsy, with the idea of possible operation. He had had malarial fever during the summer, but for three months had been quite free from chills. His temperature was normal for a week. On the eighth day he complained of feeling chilly, and had a temperature of 101.6° F. Crescents and flagellate bodies were plentifully found in the blood.

These two cases illustrate how easily we may account for sudden rises of temperature during the course of certain diseases. In both instances, but more particularly in the first, it was of the greatest satisfaction to know the cause of the new trouble.¹

In the surgical wards, also, blood-examinations are always made when there is an unexpected rise of temperature. If the plasmodia are absent, the cause of the fever is looked for elsewhere; if present, as they have been in a number of cases, the anxiety and trouble, which would have resulted had no examination been made, are done away with.

Too often, unfortunately, the chills and fever of a beginning phthisis are, by careless physicians, ascribed to malarial fever. On the other hand, when we may fear that the symptoms are those of phthisis,

the presence of the organisms will always set aside these fears—as in the following two cases.

CASE VII.—J. R., seventy years of age, a fisherman, when admitted gave a history of having had a severe cough with expectoration, and occasional chills and fever. He had lost much flesh, and his appearance was that of a man suffering from some chronic wasting disease. There was no enlargement of the spleen to be detected. The temperature was subnormal at many observations. The examination of the lungs gave a negative result, however, and the sputum was free from tubercle bacilli and elastic tissue, but in the blood were many intra-cellular and extra-cellular and segmenting forms.

CASE VIII. is that of a young man now in the wards, who gave a history somewhat similar to the above. He had had no chills for some time prior to his admission, but the cough and expectoration had persisted. His appearance was very suggestive of consumption, and local signs were found in the right lung. As in Case VII. the examination of the sputum for bacilli and elastic tissue was negative, while that of the blood showed the organisms to be numerous. Before these examinations were made the case was considered as in all probability one of phthisis.

To be sure, cases are not frequent in which, from close questioning and careful examination, we are unable to make a differential diagnosis between these two diseases. But it is in the infrequent and atypical cases that we need every means to aid us, and as the examination of the blood is easier and more practicable than that of the sputum, it must at times be of much value.

The following three cases are given to show that repeated examinations of the blood may be necessary and should always be made when any doubt exists.

CASE IX.—J. P., twenty-nine years of age, came to the dispensary complaining of headache, loose bowels, cough, and "chills and fever." His tongue was heavily coated; temperature 104° F.; and, as Dr. Osler noted at the time, "the man had the appearance of a typhoid-fever patient." His blood was examined before he went to the ward, and one intra-cellular body was found. During the following two days the examinations were negative on five successive occasions. As there were no chills or sweats, but only an irregular, continued fever, and the patient was dull and stupid, with tongue heavily furred, we were almost doubting the accuracy of the first examination. On the third day, however, crescents were found; and under the use of quinine he was well in a few days.

CASE X.—C. S., twenty-three years of age, was admitted October 10, 1889. On October 1st she had had a chill, followed by fever. The chill was not repeated, but there were constant fever, headache, malaise, loss of appetite, loose bowels, vomiting, cough, and on one occasion epistaxis. She looked very ill, the skin was hot and dry, the tongue

¹ The quinine administered seemed to exert a decided influence over the primary affection. The convulsions, which had been frequent, were not repeated while the boy was under observation, and the colitis began to improve immediately. This may have been a coincidence.

furred and tending to dryness, the spleen enlarged, the temperature 99.2° F. The blood was repeatedly examined with negative results. The temperature continued high, but was not characteristic of typhoid. Quinine was, of course, not given. Finally, after numerous examinations, extending over a period of many days, crescents were found. Quinine was then prescribed, and the girl immediately and rapidly convalesced.

CASE XI.¹—L. K., eighty-one years of age, was admitted July 25, 1889, complaining of headache, pain in the back, cold feet and hands. Two weeks before, he had had a mild "sunstroke," which, however, did not cause him to stop work. "There were signs of bronchitis at the bases of the lungs, and in the right interscapular region the note was higher pitched and the breathing tubular." The spleen was not enlarged. After a chill, lasting a few minutes, the temperature rose to 105° F., and for the next three days varied between 101° and 103°. During the morning of the 28th it was subnormal, the pulse irregular and the patient very weak. The case was considered to be one of senile, low pneumonia, as one examination of the blood, on the 25th, had been negative. He grew steadily worse, and died August 2d. But at the post-mortem examination a slight lesion was found at the right base, while flagellate organisms were numerous in the blood.

It is, necessarily, a very difficult matter to say what the outcome would have been had more careful examinations of the blood been made, but no other means would have sufficed to have made more out of the case than was made.

The fact that there are cases in which the organisms, though present, cannot at once be found would seem to detract from the value of this aid in diagnosis. But I have been able to collect only these three cases from many hundreds—and they all occurred when the method and value of the examinations were just beginning to be understood—so that it is more an apparent than a real defect.

Notwithstanding the fact that such cases may exist, we cannot fail to recognize the importance and value of negative examinations. More particularly is this true when we are differentiating between malarial fever and typhoid. The few examples that have been given are sufficient proof that at times we cannot, by means of symptoms or signs, distinguish between the two. The very general use of the term "typho-malaria" in this part of the country supports this view. Recognizing this to be true, and remembering how much more serious it is to mistake typhoid for malarial fever than *vice versa*, the true value of such negative examinations becomes apparent. I shall not give more detailed cases as illustrations, those already given, especially I., II., III., IV., and IX., need only be referred to.

¹ Reported by Osler in Johns Hopkins Hospital Bulletin, vol. I, No. 1, as above.

During the last fourteen months the result of the examinations of the blood has, in every case, been the main factor in making the differential diagnosis—without a mistake having been recorded.

Since the introduction, in July last, of the systematic cold-bath treatment in all cases of typhoid, the need of such a sure diagnostic point has been particularly great, and hence its value has increased. In places where typhoid and malarial fevers are both common, it will prove of especial value.

Quite recently there has been an epidemic of typhoid fever in a small manufacturing town adjacent to Baltimore, where malarial fever has been a common plague for years. Many of the workmen, when ill, apply at the hospital. Not infrequently two or more of these men have come together, giving identical histories—or, if stupid foreigners, no history at all—and presenting similar conditions. And still, by means of the blood-examinations, we are able to send one home with the assurance that he will soon be well and able to work, while the other is prepared to undergo a long and tedious illness. Without such examinations we must either detain the malarial patients an unnecessarily long time, while we watch the effect of quinine and study the temperature curve, or send some of our typhoid cases back to work, in the hope that it is only malarial fever—surely, in some cases with disastrous results. When we remember how the two diseases may resemble one another in every particular, and how important it often is for these men to know the probable duration of their illness and when they can be at work again, the truly practical value of such a means of diagnosis is most fully appreciated.

No less valuable are negative results in those cases referred to above, in which we wish to determine whether chills are of malarial origin or are due to suppuration, so that operative interference may be called for. Quite recently a case in point was cited, and no doubt many others similar to it will be recalled. In this instance, in which in the course of an obscure cerebral affection chills occurred, it was "decided to give the patient the benefit of the doubt," and put him on quinine for a few days. The chills continued, an operation was performed, pus was found, but the patient died. It is, of course, impossible to say what might have been gained by operating as soon as examinations of the blood showed that the chills were not the result of malarial infection.

Thus far we have considered the use of this method of diagnosis in only the hospital ward and dispensary. In private practice the situation is different. Means of diagnosis that are available in the hospital are here too often impracticable on account of the time required for their employment or

for want of proper apparatus. On the other hand, we are far more desirous of making the diagnosis and giving a true prognosis as soon as possible. Again, we cannot rely on the observations of friends or relatives, as for instance, in frequent temperature-taking, but must have means of diagnosis that we ourselves can apply.

Fortunately, blood-examinations are practicable in private practice, and since cases like the foregoing are quite as likely to occur here as in the hospital or dispensary, it is well to describe here the method used:

The drop of blood is taken from the finger-tip or the lobe of the ear. The latter is preferable on account of the skin being thinner and less sensitive. The part selected is washed well and then dried, to remove particles of dirt and sweat. A slide and cover-glass having been carefully cleaned, a very slight prick is made in the skin with a needle or pin. Immediately touch the cover-glass to the drop, without touching the skin, and quickly transfer it to the slide, the object being to prevent crenation of the corpuscles. Gently press or move the cover-glass to destroy the rouleaux, so that each corpuscle may be well seen. It will be found that only a very small drop of blood must be taken to accomplish this end. The sooner the examination is made the better, but the preparation will remain in good condition for two hours, which gives ample time for carrying it to the office or hospital. While the immersion lens brings out the bodies most distinctly, a good one-seventh objective is of sufficient power. With a little practice the preparation of the slide takes but two or three minutes.

The conclusions to be drawn are:

1. There are cases in which, from history, symptoms and signs, we cannot differentiate between malarial fever and certain other diseases.
2. In examining the blood of these cases for the presence or absence of Laveran's organisms, we have a means of diagnosis at once accurate, practical, and practicable.
3. Those cases are rare in which the organisms, though present, cannot be found, and they do not exist at all if the examinations are careful and the examiner has had experience.

THEORY AND PRACTICE OF WOUND-DRAINAGE.

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It may be laid down as a surgical axiom that, when very free, all wound-secretions should be afforded an easy exit, in order to prevent contamination of the wound by the putrefactive changes likely to take place in them. This is drain-

age, and it may be natural or artificial. Natural drainage is to be preferred, and is secured by leaving the most dependent part of the wound open; by having wide spaces between the stitches; by making new openings or by allowing the secretions to flow freely from the surface of a sore or superficial wound, or even from deep wounds in which there is no obstruction. Wounds that are allowed to free themselves of secretions in this way should not be obstructed by the dressings used, which should be composed of such materials as will readily and completely absorb the discharges or allow the discharges to pass freely through them.

Artificial drainage is one of the very oldest resources of surgery, and dates back to the early part of the fourteenth century. The *systematic* practice of artificial drainage is of but recent date, and owes its development to Chassaignac, who published his researches and conclusions on this subject in 1859. His teaching and practice were confined to wounds of a septic nature, and his method was simply the removal of purulent secretions by means of perforated rubber tubes. Since his day the practice of drainage has been extended so as to include the removal of non-infected accumulations by this means, with the purpose of removing tension and disposing of products in wound-cavities that might become septic.

The question of the value of drainage in wounds and of the means of best accomplishing it has attracted a great deal of attention during the past few years. There has never been a consensus of opinion on the subject. It is, however, agreed by all that superficial wounds that are allowed to remain open and heal by granulation, intra-peritoneal wounds when aseptic, and wounds in which a blood-clot is purposely allowed to remain, with a view to its becoming organized, do not need to be drained. If the best results are to be obtained, all suppurating wounds must be drained, either naturally or artificially.

Tubes of India-rubber, glass, or metal; silk thread; catgut and iodoformized wick, are the common and familiar materials used for securing drainage. Of these the rubber tube is the most frequently used, as it is the most reliable and most generally adaptable of all the varieties of drainage-tubes. Indeed, the only objection that can be urged against it is that it is not absorbed and therefore has to be removed. For this reason in ordinary aseptic wounds bone drains have been preferred by some.

In suppurating wounds the rubber drain is always to be preferred and should be substituted for the absorbable drain the moment a wound begins to discharge pus. This is because, even in suppurating wounds, bone and similar drains are unstable

and may disappear by absorption, and thus the end and aim of drainage be defeated.

When, at the time of operating, chloride of zinc, carbolic acid, or permanganate of potassium are used as antiseptics, they unduly stimulate a wound and cause a freer discharge of serum than when sterilized water or a mild solution of the bichloride of mercury are used. In former years, before we were so familiar with the value of the bichloride solution and boiled water, the more frequent use of stimulating antiseptics made necessary the more frequent use of drains to carry off the excess of serum that was produced by their use and rendered impossible the methods of dry dressing, now so successful. It is now the rule that, whenever practicable, fresh wounds should, as nearly as possible, be put in the condition of subcutaneous wounds or injuries.

While suppuration will take place in a certain limited proportion of subcutaneous wounds, the number, as compared with open wounds, is so small that Nature's method, as far as possible, should be simulated and such a primary dressing used as will best secure this end. Two indications are to be met in the drainage of wounds: first, the removal of fluids that accumulate in it immediately or soon after the operation. This may be called primary drainage. In the second place, we drain to remove pus and wound-secretions that have undergone septic changes. This we may properly call secondary drainage. Primary drainage is undertaken in the hope of preventing the conditions that render secondary drainage necessary. For the latter purpose tubular drains, preferably of rubber, must be used, because horsehair, silk thread, or spun glass, which act by capillarity, while useful for primary drainage, will not carry off pus or broken-down and softened tissue.

It might be assumed that any wound of considerable size or depth may require artificial drainage, while the clinical facts are that a considerable percentage of wounds, large and small, heal without an undue accumulation of serum or blood, or the formation of pus. Drainage in such wounds is very clearly not required. It is impossible to lay down a general rule that in any given case or even in any class of cases can be relied on, for the important reason that all patients are not alike. The personal equations of heredity, habits, mode of life, previous and present illnesses, etc., are very important factors. Even surgeons of small experience are well aware that many wounds heal kindly without the use of drains, while others prove troublesome even with the most careful management at the time of operation and the judicious use of drainage-tubes. Antiseptic precautions may as well be carried out in the one as in the other; the surroundings and after-treatment may in every particular be

similar, yet the results may be very widely different. In the one case the processes necessary to repair go on uninterruptedly to a speedy and complete cure, while in the other we have suppuration and a tedious recovery. These opposite conditions in the behavior of wounds cannot depend wholly upon the operation or the character of the wound, nor can they be attributed to the after-management. This, naturally, should lead the progressive surgeon to study each case independently, instead, as is too often the case, of following a routine plan. The tendency is to run to extremes. One surgeon will place one or more tubes in every wound; another will drain only a certain class of wounds, while a third will abstain from drainage in all his cases.

It has been my experience that a very great proportion of all operation-wounds, made under modern aseptic precautions, and in which proper means are afterward used to keep them aseptic, will heal mainly by first intention, accompanied by but a small amount of discharge of any kind and no pus. On the other hand, the most scrupulous care will not absolutely prevent suppuration.

It is maintained by some of the best surgeons, that if an open wound could be placed in the same condition as a subcutaneous one, the results would be as satisfactory in the one variety as in the other. In his address before the International Medical Congress at Berlin, Sir Joseph Lister said that it would be a great advance if we could do away with drainage, and that the complete fulfilment of his early dream would be realized when our art shall reach so great perfection as to render drainage unnecessary. The practical surgeon of to-day can hardly look forward to the time when all wounds will heal without suppuration; certainly not if he has to rely on imitating Nature's methods as exemplified in the healing of subcutaneous wounds, because a certain percentage of subcutaneous wounds will and do suppurate.

The spontaneous generation of pus is by many good pathologists no longer believed to be possible. They say the infection must come from without by the introduction of pus-cocci, either by their spread along the hair, sweat, or other open ducts, or by their being carried to the injured parts by the blood. It is easy to see how pyogenic germs may be carried along open ducts to any secreting gland of the body, and, when it is in a state of inflammation, cause suppuration, but it is not by any means so plain why one subcutaneous injury will result in suppuration while another escapes. It is rare that pus forms at the seat of a fracture or dislocation, or after the subcutaneous laceration of tendons, though suppuration is common after severe bruises. Every country practitioner is familiar with the abscess commonly

known as "stone-bruise" that forms under the thick skin of the heel of a barefooted boy. There is a certain *tertium quid* that enters as a factor. This, I think, is found in the vitality and resistance of the tissues. Living tissues offer great resistance to microorganisms. On the other hand, bacteria cannot thrive upon the products of decomposition. What they need is dead, but undecomposed albuminoid substances. I think that a careful inquiry into the suppuration of subcutaneous wounds will show that this is precisely the condition that obtains in them. The tissues and cells are crushed in a considerable mass, and by the cutting off of the blood-supply they become dead and constitute a fertile field for the action of pus-cocci. These conditions do not obtain in cases exempt from suppuration, as fractures, etc. While the tissues may be more or less crushed they are not devitalized. No other explanation seems to me to be reasonable. If we admit that pus may form without the agency of micrococci, all our modern theory of pus-generation must fall to the ground.

After bruises and injuries that do not impair the integrity of the skin, pus may form in any locality subcutaneously. Pus has been found in every closed cavity of the body, including even the joint-spaces. It is difficult to see how, through the uninjured skin, infection can occur in such cases. I have seen a bruise, occurring in a perfectly healthy subject free from any dyscrasia, followed by the formation of pus; while abrasions and cuts deeper than the skin, received at the same time, would heal under the dried secretions without a sign of pus. That after injuries tissues will break down and disorganize subcutaneously is a common experience, and so long as such conditions obtain it will be impossible to dispense with the use of drainage-tubes, and just so long will Lister's dream be unfulfilled. It was in this class that Chassaignac, in 1855, used drainage-tubes and recommended them to the profession. They certainly were valuable aids to the surgeon in the days of septic surgery, and when wounds become septic they are yet so. If, as I have said, some subcutaneous wounds will suppurate, is it not reasonable to conclude that wounds treated in every way possible to imitate them will, in a certain proportion of cases, be followed by suppuration? Deeply penetrating wounds that are also contused need drainage from the beginning, because as a rule tissues that are lifeless will break down and become detached from the living tissues and should be allowed easy and safe exit. If, however, by the valuable aid of asepsis and the modern dressing of wounds we shall be enabled to control putrefaction as successfully as Nature does, as shown by the results in subcutaneous injuries, we may feel well satisfied.

What I have said is in the line of conservatism.

The drainage of wounds has already been carried to the extreme and much injury has been done by its indiscriminate practice. Clearly, the majority of aseptic wounds do not require to be drained, and just as clearly, a septic wound must be drained. It is impossible to foresee whether a wound will remain aseptic, or what wound will become septic. Could these problems be solved at the outset, the question of the treatment of wounds would be easy. For some years my plan has been to close at once and without drains all clean-cut wounds, such as those made in amputations, the removal of large tumors, breasts, resections, ligations of arteries, etc. I offer Nature a chance, to be interfered with if, as a result of excessive accumulation of serum or blood in the wound cavity, there be an undue rise of temperature with tension; should this condition arise I at once relieve it by removing a stitch or two at the most dependent part of the wound, or by the introduction of one or more tubes. At this time I give preference to the rounded end of a soft rubber male catheter, properly disinfected and perforated. It can easily be inserted into any part of the wound, and, owing to the presence of the smooth rounded end, to the required depth.

A wound may be aseptic, while the discharge of serum and blood may be so great as to make drainage advisable to prevent pressure on the adjacent tissues, the vitality of which might be destroyed by the cutting off of their blood-supply, with consequent necrosis.

In such cases the tube in many instances may be removed in a few hours, often in less than twenty-four, and the healing process goes on uninterruptedly. During the first twenty-four hours or so, a drainage-tube does not exercise the influence of a foreign body in a wound any more than the serum and blood thrown out into its cavity. It is only at the moment when the tissues, the cellular elements, capillaries, etc., have reached the point where repair has just begun, when the first cells have assumed the embryonic state, that the drainage-tube becomes a foreign body, in the sense of interfering with repair. Were it not for the danger of the wound becoming infected by the removal of the dressings for the purpose of withdrawing the tube, no harm for the first day or two could come to any wound by the presence of a clean drainage-tube.

To teach that drainage is *never* necessary in aseptic wounds is not warranted by the facts developed in the experience of every observing surgeon. Wound-cavities, in some instances at least, will become distended by serum and blood to such a degree as to require the withdrawal of the fluid to conserve the integrity of the tissues. A moderate amount of serum is useful and a small amount of blood harmless, while, in some special operations on bone, for

the relief of club-foot, etc., special effort is made by the surgeon to secure a blood-clot, with the view of its becoming organized. However, in ordinary operation-wounds, the smaller the amount of blood, the better. A blood-clot in a wound is more liable to soften and break down than it is to organize. My practice now is, if a blood-clot is found to be present within the first twenty-four hours after an operation, to open up the wound and remove the mass. When I have failed to do so it has often been to the disadvantage of my patient. The following cases, selected from a number, will illustrate this point.

Mrs. R. H. S., aged forty-two, a healthy, well-developed woman, came under observation in May, 1890, in consultation with Dr. Balloch. She was suffering from cancer of the left breast, well advanced, with retracted nipple and a small portion of the skin below the nipple discolored and on the verge of ulceration. I advised removal of the breast, which was done in July, 1890, with the assistance of Drs. Balloch and J. F. Graham. On the morning of the day following the operation she complained of a feeling of tension in the wound. I felt satisfied that a considerable blood-clot must occupy the wound-cavity, but as I had been compelled to remove a portion of the great pectoral muscle in its entire depth, I concluded, in the hope of its becoming organized and thus preventing a sunken and adherent scar, to allow the clot to remain. The superficial cut and all parts not separated by the clot, healed by first intention, but in the course of a week the clot began to soften and I was compelled to open the wound and insert a rubber drain to carry off the blood.

I am convinced, as I was then, that had I opened the wound in the beginning and turned out the mass, I should have obtained a better and speedier result and contributed greatly to the comfort of my patient. Could I have foreseen that blood would be so freely discharged into the wound-cavity, I should have inserted a drain at the time of the primary dressing or placed my stitches wider apart. But when first closed the wound gave no indication of what followed.

As a contrast I will relate the case of Mrs. A., a strong, healthy woman, forty-two years of age, whose breast I removed for cancer some months previously to the operation on Mrs. S.

The variety of cancer was the same, and the condition of the patients as to age and general health very similar. Ten hours after the operation I was summoned to see her and was informed that she was suffering pain and a sensation of tension in the wound. I removed the dressings and found the wound-cavity distended by blood and serum, which were oozing at a number of points between the stitches. I at once removed all the stitches, except one at each extremity of the cut; turned out the blood-clot; washed out the cavity with a weak solu-

tion of bichloride; adjusted the flaps and stitched them as before; sprinkled the cut with iodoform; covered it with several thicknesses of iodoform gauze; applied a thick layer of absorbent cotton, and finally a snug bandage over all. She was at once made comfortable, slept well, and at no time did the temperature reach 100°. This first dressing was allowed to remain eight days, and when it was removed it was found that the entire wound had healed by first intention. The stitches were removed and the stitch-holes filled with iodoform. Not a single drop of pus formed during the entire healing process.

While it may be urged that a drain inserted at the time of dressing would have saved the necessity of reopening the wound, I believe the results were as good, if not better, by the method I adopted. I therefore continue to practise it.

The snug adjustment of the walls of a wound-cavity is a matter of no small importance in doing away with the necessity of drainage. Such adjustment, aided by the proper application of suitable compresses and bandages, is very efficient in limiting the oozing from the capillaries and even in controlling the flow of serum into the wound. The conditions that demand drainage in aseptic wounds are thus often obviated.

There is always a mean between two extremes, and, as in anything else, this applies in surgery and surgical procedures. In regard to drainage the middle course is the safe and proper one. Clearly, *all* wounds do not need artificial drainage, and just as clearly *some* wounds should be drained. The surgeon must decide as to the best course in each case. It is here that the judgment of the surgeon is best exemplified. In many cases the after-treatment of an operation-wound requires infinitely more skill and judgment than does the operation itself. I believe there is no other detail of the management of wounds and injuries that is so subject to whims and extremes as this of drainage.

I cannot better close these remarks than by giving the details of a case that lately came under my observation, and that may serve as a warning against the too free and indiscriminate use of the drainage-tube.

M. A., a young and healthy woman, consulted me, in February of this year, for persistent pain and swelling in the right arm, so great as to preclude the use of it in her work, that of a clerk. She gave a history of typhoid fever in 1889, followed by abscesses in both axillæ. The abscess in the left axilla healed spontaneously; that in the right axilla was opened November 1, 1890, by a competent physician of this city. Ever since, she has had pain and swelling as noted. On the humeral side of the right axillary space was a small purple spot, very tender, pressure on which caused intense pain running down the arm to the fingers. I could not

understand the case, and after a routine course of treatment and careful consideration of all the facts, I proposed an exploratory incision, believing that a foreign body was present, most probably a fragment of clothing. After some delay she agreed to this proposition, and on March 19 I made a small incision over the purple spot mentioned, and, after some search, I found the fragment of a drainage-tube. The wound healed kindly, and the patient is now completely well, with full use of the arm.

THE ETIOLOGY OF DYSENTERY: IS IT INFECTIOUS?

BY W. M. GREENLEE, A.M., M.D.,

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ALMOST every new epidemic of dysentery revives the much-mooted question as to the causation of this disease. Indeed, it is by means of careful observations, made during such an epidemic, that we may hope at last to arrive at the real truth concerning any of the causes leading to an outbreak of epidemic disorders. The tendency just now, of course, is to ascribe all diseases, and particularly those that make their appearance in epidemic form, to some microbe or special bacillus. While it seems to be conclusively established that some of our worst maladies are at least accompanied by characteristic bacilli, yet it is decidedly unscientific to generalize from such limited observation and insufficient data. I am ready to admit that certain diseases are due to specific microbes—for not to admit this would indicate a blamable obstinacy or a lamentable ignorance. But I also believe that many of these so-called specific germs bear a sequential and not a causative relation to the diseases in the course of which they appear.

This question is of practical importance, since it is very intimately connected with sanitation.

Let us particularize, taking dysentery as an example. Now, if dysentery is an acute disease produced by the entrance of a morbid germ into the human body, we should be forced to admit that it could only be produced by the entrance of such a germ, and that we could only have dysentery present when we had this special germ present. Otherwise it would not be a specific germ. That is to say—the disease cannot be produced by simple violations of hygienic laws and by a specific microbe, etc. The two causes are incompatible, in the very nature of things, since a bacillus requires a suitable nidus in which to develop, and cannot, of course, be developed when a person is merely careless about his food, clothing, etc. Therefore, the proof of the existence of one class, sustaining a causative relation, does away with the other class as a possible factor.

If, then, we can prove that a disease is caused

directly by a violation of the simple laws of hygiene, we know that any germs that may appear in the course of the disease are a consequence and not a cause. This is where sanitary science comes in. If dysentery is due to a germ, then improved sanitation may hope to destroy all possible sources of infection. But, suppose we depend upon improved sanitary measures when the cause is not a specific germ, we shall find the disease appearing in spite of the most vigorous preventive measures.

Notes taken during a recent extensive epidemic at this place, and the study of other epidemics, suggest the following facts:

1. *Dysentery makes its appearance in towns and villages almost perfect in their sanitary condition.* It is a noteworthy fact that epidemics of dysentery appear in our smaller towns, perhaps with even greater frequency than in our large cities. The cause of this will be pointed out further on. We also know what a common and fatal disease dysentery was during the late war. The soldiers were certainly not subjected to what might be termed bad sanitation, except in those cases in which the disease appeared in crowded prisons.

2. *Dysentery is a disease that shows a decided tendency to appear in epidemic form during a season when fruit is unusually abundant, following a year or two characterized by a marked failure in all kinds of fruit.* This is true of the epidemic just closing, and the same fact has often been noted with regard to others.

3. *Dysentery seems to break forth during the latter half of summer and follows a season characterized by severely hot days and very chilly nights.* It will thus be seen that the conditions under which an epidemic of dysentery appears are just those most often met with in our smaller towns and in country districts. People engaged in hard work in the day and in the habit of sitting in their sweat-saturated garments, without coat and hat, are usually the victims of this epidemic. My notes show that by far the greater number of cases treated during the outbreak here presented a distinct history of over-indulgence in green fruit, repeated time and again. The first trouble occasioned by such over-indulgence was a simple diarrhea. This would moderate, and then the same process would be gone through again until dysentery would finally develop. I had several of the medical students take complete charge of the nursing of some of the worst cases. They even emptied the discharges, and had every opportunity of receiving into their systems the causative germs, if there had been any. Not one of these contracted the disease. It is all the more significant when I state that I had told them to eat no fruit and to be very careful both as to diet and the changes from the heat of the day to the cold of the night.

It would seem that dysentery is most probably a disease arising from violated hygiene alone, and should be combated by teaching the necessity of greater care in what is eaten, as well as the avoidance of all sudden chills.

ORIGINAL LECTURE.

LOCOMOTOR ATAXIA.

Abstract of a Clinical Lecture delivered at the Bellevue Hospital.

BY W. H. THOMPSON, M.D.,
VISITING PHYSICIAN.

GENTLEMEN: These two cases will form the text of our lecture to-day. The first patient tells us that he has been sick for about one year, and that he first noticed a pain in the back, then difficulty in walking, and later on pain in the calf of the leg. He has had no pain in his side, and no headache. Urination is sudden, frequent, and burning, and the act is prolonged. There is a sensation of numbness about his feet.

This other man says that he has had quite severe pains in the bowels and back, and occasional attacks of vomiting; that there has been a feeling as though a tight cord were tied about his waist, and that walking has been difficult, for about one year. He thinks that his legs are weak or paralyzed, but you notice that he can flex and extend his legs, even against great resistance. He has had no choking spells. He has noticed that his eyes watered when reading, and that occasionally he saw double; but the two objects did not always occupy the same position with reference to each other. In addition to these symptoms, he tells us that he has had severe pains up and down the legs; and I wish you particularly to notice his gestures while describing these pains, for they are very characteristic. Always accustom yourselves to watch a patient's gestures very closely, for they will often give you important hints as to the nature of the pain. Thus, when a man complains of pain over his chest, and indicates its situation by placing the flat of his hand over the spot, the pain is most probably due to bronchitis; whereas, if he *points* to the spot with the tip of the finger, locating it very particularly, the pain is likely to be of pleuritic origin. Again, if a patient tells you that he has pain in his knee, and at the same time grabs the knee with his hands, you may be sure that the pain is not due to rheumatism, for rheumatism is an inflammatory affection, and the patient takes hold of the painful part much more tenderly. Such a gesture would be more often indicative of neuralgic pain. You notice that this patient's gestures indicate not only neuralgic pain, but pain of a particular kind, and very characteristic of the disease which we have under consideration—he describes the pain as shooting *up and down* his leg. More commonly, however, in locomotor ataxia, this pain shoots in one direction.

The disease we are studying to-day is called locomotor ataxia; but it is highly important to remember that the ataxia is, in many cases, by no means an early or prominent symptom, and owing to the Protean manifestations of this disease, mistakes in diagnosis are very common. By ataxia is meant a want of discipline between the

muscles. They are no more paralyzed than are the muscles of an intoxicated person. Every muscular action of ordinary life is the result of long training of the muscles to work in unison, and to secure such a result requires the most delicate and harmonious adjustment of the opposing muscles. The "mental muscles" are those that carry out the purposes of the conscious mind, and these muscles are the first to show any lack of co-ordination. In the common act of sneezing, for example, an afferent impression starts from the nose, and calls one hundred and ten muscles into play to carry out the act. At first there is a long, steady action of the diaphragm until a considerable quantity of air has been taken in, then word is sent to all the muscles of respiration to be ready, and act in an orderly manner. If at this moment the person were tickled in the side, the muscles in this region would be prevented from acting in concert with the others, and the sneeze would not be a success.

Locomotor ataxia is due to a lack of discipline in the muscular system, and before the ataxic symptoms are at all prominent, such actions as require considerable co-ordination of the muscles, as, for instance, buttoning the coat, are performed not in a hesitating, but in a very hurried way.

The symptoms of locomotor ataxia are conveniently divided into three classes—viz., sensory, visceral, and ataxic; and the existence of this disease is to be suspected whenever any one of these three varieties is present.

(1) Sensory symptoms. These symptoms are especially characteristic of locomotor ataxia, and they may be the only ones. By these symptoms I was enabled in one case to predict the occurrence of ataxia eight years before it actually appeared. These symptoms are neuralgic and not inflammatory, and the patient will often localize them by pointing in the manner already noticed in the second patient, and describe them as being of a boring character. The "crushing" pains are more likely to be felt in the extremities, just above the ankle. The sensation of constriction is often felt just above the ankle or wrist, but when it is around the body, like a tight cord, it indicates a myelitis. Very often the patient will localize the pains with his finger, and speak of that spot as being very painful—yet an examination will often show that the area is really anesthetic. Similar areas may be located around the chest, and this symptom is often mistaken for an indication of some pulmonary or cardiac affection. These severe neuralgic pains often vanish quite suddenly. Another very characteristic kind of pain is the "lightning pain," that by many patients is described as very similar to that produced by an electric shock. These may at first be the only indications of locomotor ataxia, but they are sufficient for a diagnosis, and the other symptoms will develop later. In our first patient these sensory symptoms, although usually most important, are by no means prominent.

(2) Visceral symptoms. The commonest of all the symptoms of this class are those referred to the bladder. The mode of micturition has been already described by these two patients. The pain is usually felt toward the close of the act. The most frequent mistakes in diagnosis occur in connection with the stomach, which is often involved in what are known as "gastric crises," the patient being attacked at short intervals with all the symptoms of cholera morbus, accompanied by great

prostration. Quite commonly the bowels are also involved. When the larynx is affected, the patient suddenly awakens with a choking sensation due to spasm. The condition of the sense of vision is particularly important, and although this first patient told us that he had no trouble with his eyes, examination shows a highly interesting condition of the pupil, known as the Argyll-Robertson pupil, from the fact that he first directed attention to this symptom in locomotor ataxia. This phenomenon is observed in about thirty per cent. of these cases. The pupils are contracted—usually symmetrically—and insensible to light; but on asking the patient to read anything close to the eye, particularly fine print, the pupils contract during the effort of reading. Often the first sign of ataxia is seen in the eye. If a patient sees double because of permanent paralysis of the muscles of the eye, the relation of the two objects which he sees remains the same; but if the double vision be due to the fact that the muscles of the eye do not work in harmony, the images do not always bear the same relation to each other—sometimes being side by side, and at other times one above the other—this form of double vision is called "ataxic diplopia," and is very characteristic of locomotor ataxia.

(3) Ataxia. Although the patient's gait may be good, one can almost always elicit some evidence of ataxia. For instance, ask the patient to sign his name, and then ask some one familiar with his signature if the handwriting is the same as formerly. Usually, it will show a very firm down-stroke and a wandering up-stroke. Again, if ataxia be present, and you request the patient to button his coat, the motions of the fingers will be very precipitate. If asked to put a pin through a piece of paper, he grabs the pin as though it were a skewer which he was going to push through a piece of meat. If he attempts, with his eyes closed, to place one finger upon the tip of the nose he will be apt to miss his aim and strike the side of the nose, as you notice this second patient does. Similarly, when he attempts with his eyes closed to place his fingers tip to tip, he will be unable to do so. The first patient when tested in this way, does not show much incoördination.

Even if all three classes of symptoms described are absent, or are discovered with difficulty, there is one symptom that is very rarely absent—*i. e.*, the absence of the patellar reflex. You notice that neither of these patients exhibits such a reflex. There are very few other diseases in which it is absent. The most common one is diphtheria, and here the reflex may be absent for two months after the attack. It is also absent in peripheral neuritis due to other causes than diphtheria, and the most common of these are chronic alcoholism and poisoning by lead or arsenic.

CLINICAL MEMORANDA.

A CASE OF LUPUS OF ELEVEN YEARS' STANDING CURED BY THE TUBERCULIN TREATMENT.

By M. MAGELSON, A.M., M.D.,
OF FERGUS FALLS, MINN.

Mrs. O. A. is thirty-four years old, and has had seven children. In the spring of 1880, after exposure to cold

and wind, she noticed soreness in and about the nose; the left ala of the nose became red, and sores formed which were covered with crusts; the sores healed and again broke out, and, after some time, the nose seemed to melt away. In the following years the sores spread over the face, healing and breaking out again in different places. When I first saw her on the 14th of March, 1889, the whole lower part of her face, from the place where the alæ of the nose should have been, round the mouth and down to the lower edge of the chin, was one continuous sore, partly covered with greenish crusts and partly showing red sparingly secreting surfaces without granulations, and with small, whitish nodules at



the bottom of the sores. The sore extended to the left eye, the lower lid of which had been entirely eaten away; there was also a considerable loss of substance at the right angle of the mouth, so that the saliva and food during eating were constantly coming out over the ulcerated edge of the lips. The upper lip was ulcerated down to the gingiva. The nose was entirely lost, the openings of the choana being covered with a membrane of scar-tissue, in which there was an opening, one-eighth of an inch in diameter, into the left nasal cavity. This membrane was partly covered with sores and crusts. There was a swollen gland under the left side of the lower jaw-bone. At this time she weighed one hundred and seventeen pounds, and was nursing a four-months'-old baby. She complained of some pricking in the sores, and of a tight feeling in the scar-tissue. Physical examination proved that her lungs were healthy. Her family history is good, her parents both living, past sixty years of age. By Ehrlich's method I found tubercle bacilli in the whitish nodules of the sores, and advised her of the nature of the disease, which had before been pronounced cancer, and treated with escharotics. I scraped out the sores with a sharp spoon, and applied iodoform ointment, 10 per cent., and ice compresses, and gave her internally arsenic in increasing doses, with some remissions during the summer. The sores healed up around her mouth, where I had done the scraping, and on the chin, and she was able to eat with greater ease. From this time I occasionally heard from her; she was living in Dakota, more than sixty miles away, but she was not getting

well, though the treatment was kept up on the same lines, and the sores were occasionally scraped by her physician. Some sores would heal, but new ones would again break out in the scar-tissue. As she notified me this spring that the disease was spreading over her whole face, and up on the forehead, I advised her to come to Fergus Falls and be treated with tuberculin. She arrived on the 11th of April, and from the upper border of the forehead to the lower surface of the chin, and from one ear to the other, the whole face was covered with sores and crusts. As I did not intend to rely upon the tuberculin alone, 10 per cent. aristol ointment was also applied, which, after a month, when the watery secretion from the sores became excessive, was changed to a strength of 5 per cent. Under local anesthesia in the beginning I used the sharp spoon on the sores. Pyoktanin was used afterward, and a 2:1000 solution of corrosive sublimate before and after the pyoktanin application. I also used Peruvian balsam to stimulate the development of healthy granulations. Internally, I gave Fowler's solution in increasing doses up to twenty-four drops three times a day. So far as the effects of the tuberculin were concerned, she showed the reaction described by Prof. Koch after the initial dose of 0.001 gram. After repeated inoculations every second, sometimes every third, day, the reaction was less, and from the 7th of May the dose was raised to 0.003 gram, and on the 28th of May to 0.005 gram. As the reaction was then very slight, I should have gone on increasing the dose, but as on the 3d of June she recognized movements of the fetus, and as the sores were healing, I suspended the tuberculin treatment. On the 13th of June all the sores were healed. I could not induce her to have her photograph taken when she first came under treatment, but the scars on the picture herewith reproduced, will show the extent of the sores. I had meanwhile several times tried by skin-grafting to cover the defect of the lower left eyelid, but the tears that saturated the different dressings applied frustrated my efforts. The dentist helped me to have an artificial nose and upper lip made, and the eyes were covered with London smoked glasses. The contraction of the scar-tissue has everted the lower right eyelid some, which, after her confinement, I intend to correct by operation. When she left, she seemed to enjoy perfect health, and weighed one hundred and twenty-seven pounds.

On the 8th of August she wrote me that her health was good, and that no new sores had formed.

YELLOW FEVER IN RIO.

BY R. CLEARY, A.M., M.D.,
OF RIO DE JANEIRO, BRAZIL.

ALTHOUGH I have nothing new or specific to offer for the treatment of yellow fever, yet because I have had some experience with the disease, and have familiarized myself with the practice of some well-known and successful physicians in this place, I would like to present a synopsis of a treatment that has been certainly not less successful than any other, both in my hands and in those of other and better known physicians.

That the pathogenic microorganism of yellow fever has not yet been discovered, or, at least, verified, notwithstanding the close and long-continued studies of Stern-

berg, Gibier, Carmona y Valle, Lacerda and others, must, I think, be accepted by the greater part of the thinking portion of the medical profession.

Dr. Sternberg has announced that he encountered no less than ten microorganisms in the alimentary canal alone, of cadavers dead of yellow fever, and that not one of them is pathogenic of the disease.

The epidemic of 1889, here in Rio de Janeiro, was very extensive, though less malignant than the one we have just passed through (1891); it was more extended over the town, but not so proportionately rife amongst the shipping, and whilst the death-rate was much greater, so great was the number attacked that the mortality per cent. was much less.

Although it is difficult to arrive at anything like certainty, I gather that the deaths were not more than 8 per cent. of all the cases, whilst in 1891 the deaths certainly were from 15 to 20 per cent. I do not give these figures as statistics, because, for well-known reasons, it is impossible to reach a definite conclusion, but they are only intended as opinions, and can be taken at what may be considered as their value. Of the thirty-four undoubted cases I treated in 1889, I was fortunate enough to lose only one, and most of them were foreigners newly arrived, and totally unacclimated in Rio. I adopted the usual symptomatic and expectant treatment, with the addition of Dr. Sternberg's alkaline and mercurial solution, which appeared in most cases to act like a charm. It was, however, apparently without effect in those cases in which it was only used late in the course of the disease.

In the epidemic of 1891 the disease appeared to take on a more malignant type, all the worst symptoms frequently appearing during the first twenty-four or thirty-six hours. As an example of this, take the following case:

On March 30th, at 5 P.M., I was called to Mr. T. H. A., an American, twenty-seven years of age, weak and much reduced by the abuse of alcoholic beverages, and only a few months in the country; the temperature was 39° C.; pulse 100, and every usual symptom more plainly marked than is customary. On March 31st the temperature was 38.8° C., pulse 82, all the symptoms intensified, streaks of black in the vomited matters, and the urine scanty. On April 1st the temperature was 37.5° C., the pulse 80, the skin moist and clammy, a total suppression of urine since the previous night, profuse, black vomited matter, and he was delirious. He died April 2d, at 7 A.M. This was a rapid case, was not singular by any means, and was, as the Brazilians graphically express it, "*fulminante*." It was treated on the principles that guided us in other cases, and no time was lost.

The following case is a typical one, and, as it embraces almost every emergency, I will give it in full, as a fair sample both of the disease and of its treatment:

Mr. C. H. L., an Englishman, thirty-two years of age, small and compact, but not weak, temperate in his habits, and about one year in the country, was attacked on May 4th. I saw him at 7.30 P.M., and found him with a temperature of 40.5° C., pulse 120, excessive frontal headache, pain in the back, extending down the thighs, eyes very much suffused and protuberant, skin moist and clammy, hyperemia and stagnation of the capillary circulation on the upper, front part of the chest.

This symptom was pronounced pathognomonic by Baron Torres Homem, the great Brazilian authority on the subject.

His bowels had not been moved for three days, and I gave him calomel 0.33 gram, with sodium bicarbonate 0.25, followed by three Russian capsules of castor oil in two hours, and antipyrine 0.50, ammonium acetate 2, and tincture of aconite one-half drop every two hours. On May 5th the temperature was 39.8° C., pulse 120, and weak, all symptoms exaggerated, and with great nausea; the bowels had been copiously moved four times. I gave him of mercuric bichloride 0.02, sodium bicarbonate 10, boiled water 1000, two tablespoonfuls every two hours, ice-cold, alternating with Murray's fluid magnesia 200, magnesium salicylate 2.50, tincture of aconite 10 drops, tincture of digitalis 2, a tablespoonful every two hours. Besides, for the nausea, he was also given of chloroform (pure) 25, camphorated alcohol 25, four drops in a teaspoonful of cold water. I also ordered the lower intestines to be washed out four times a day with boric acid 10, β -naphthol 1, boiled water 1000. The antipyrine mixture was given occasionally to lower the temperature. On May 6th the temperature was 38.8° C., the pulse 82, and the stomach more quiet. He vomited once, the ejected matter presenting black streaks. The pains were now much easier, and there was a yellowish tinge in the eyes and upper part of thorax. As there has always been a decided rise of temperature toward nightfall, in addition to the previous treatment, quinine sulphate was given in divided doses. The urine contained some albumin. On May 7th the temperature ran up to 38.9° C., the pulse was 84, and there was about 15 per cent. of albumin in the urine. I continued the treatment, and as the chloroform and camphor had no more effect, I gave of cocaine chlorhydrate 0.10, Murray's fluid magnesia 200, a tablespoonful every two hours, or *p. r. n.* The urine became very scanty. I gave two hypodermatic injections of caffeine citrate 0.33, with an interval of two hours; at nightfall he urinated abundantly. On May 8th the temperature was 37.9° C., the pulse 72, the skin moist and soft, the tongue cleaning, the yellow tinge decided and dusky, and there was about 20 per cent. of albumin in the urine. I gave of aqua rosæ 160, tannin 2, alcohol 10, syrup of tolu 30, a tablespoonful every two hours, always preceded by salol 0.25 for the excess of albumin in the urine, alternating with the magnesia mixture prescribed on the 5th. As the temperature again rose to 39.8° at night, two capsules of antipyrine, each 0.50, were given, with an interval of one hour. On May 9th the urine was very albuminous—perhaps 40 per cent.—the temperature 37.4°, the pulse 68, the stomach quiet, very weak and nervous. I continued the treatment. On May 10th the quantity of albumin in the urine was less, the temperature 37.5°, the pulse 66. From this date he became convalescent, and was put upon a tonic; he rapidly recovered strength, although the case was complicated with an attack of malarial fever, and followed by congestion of the liver.

The diet all through the disease was iced boiled milk, in small quantities, seltzer water, and, when it appeared to be needed, a little brandy occasionally.

The accessory treatment was mustard plasters, small blisters, injections or intestinal washings of boric acid and naphthol; and, as the magnesia mixture and Stern-

berg's mercurial, alkaline potion were disinfectant and antiseptic, thus the whole alimentary canal was always disinfected.

I have found brandy preferable to champagne, since the latter often adds to the already acid condition of the stomach, even though it apparently does good when it is taken. It is well known that the force of the attack in yellow fever is upon the alimentary canal; hence our rational treatment must be directed in accordance with this idea, though symptoms must be combated as they arise.

The two symptoms often fatal are suppression of the urine and black vomit, which is another name for hemorrhage. For the first, besides some diuretic medicine, hypodermatic injections of caffeine appear to act best in most cases, assisted by turpentine stupes to the lower part of the spinal column, frictions, hip-baths, etc. It is said that an able physician here has prescribed small, ice-cold clysters, so that they are retained near the bladder, but I have never used them with this object.

For the black vomit it is the rule to give ergotene, tincture of iron or gallic acid, but I believe they are of little benefit, and have found that by quieting the stomach with cocaine and counter-irritants, we are more generally successful, though as a routine practice, I always prescribe gallic acid, and have seen it apparently have good effects.

As for the quinine treatment, it is little used here, and I must say, I have never seen one case benefited by it when used in the beginning, though in the third period of the disease its use is very frequently beneficial.

To return to the subject of black vomits: though I have never seen it used, or heard of such a thing, why may not *hot water*, as hot as it can be borne, stop the hemorrhage from the stomach, as surely as it does that from the uterus *post partum*?

SKIN ERUPTIONS FOLLOWING THE USE OF QUININE SULPHATE.

BY EDWARD A. WELCH, M.D.,
OF POTTSTOWN, PA.

THE following cases of skin eruption, due to the administration of quinine sulphate, are reported in the belief that the general practitioner should place on record careful observations of all instances of abnormal or unusual results following the use of drugs:

CASE I.—At 8 P.M. of January 30, 1891, J. W., a school-boy, fifteen years old, took gr. iv of quinine sulphate for the purpose of "breaking up a cold." I had seen him half an hour previously, and, with the exception of an incipient coryza, he seemed in perfect health, his temperature being 99°. At 9.30 P.M., an hour and a half after taking the quinine, the lad called on me in great alarm, with the statement that "he had the scarlet fever." His temperature was 99.6°, the pulse rapid, and he was in a decidedly nervous condition. On examination, I found his body (front and back) covered with an erythematous eruption of a bright, vivid-red color, disappearing on pressure, but returning immediately, and in many places closely resembling the rash of scarlatina. The surface of the skin was also decidedly hyperesthetic, a condition not present in the boy's normal state. He

stated that when he first noticed the rash, some ten minutes before, it was mostly on his neck and upper part of the chest, and seemed to be spreading rapidly. Further examination showed an efflorescence on legs, arms, feet and hands. A number of small, flat wheals, of the size of a pea, were at first visible, scattered at intervals over the body, but these to a large extent disappeared during the hour and a half that the patient was under observation; and became merged in the general erythema. The eruption, which was at first "patchy" in character, rapidly became confluent, and at length almost the entire surface was of a uniform, bright-red hue. Accompanying the eruption was an intense prurigo, so severe that the patient was with difficulty prevented from continual scratching.

A sedative and cooling ointment was applied, and the boy sent to bed. The next morning the eruption had almost entirely disappeared, and the boy was as well as ever, while in another twenty-four hours all traces of the exanthem had vanished.

Recognizing the possibility of a skin eruption due to errors of diet, I made a careful search for such possible cause, but could find none. The case seems to have been one of quinine eruption, pure and simple.

CASE II.—J. K., a school-boy, eighteen years old, at 7.30 P.M., on March 18, 1891, took grs. viii of quinine. At 10 P.M. there was noticed an erythematous reddening of the whole body, with occasional distinct spots (one-quarter to three-eighths of an inch in diameter) of a deeper color. There was no elevation of temperature. On the following morning the erythema was still persistent, disappearing momentarily on pressure. There was also at this time considerable prurigo. Examination of the membranes of the mouth, tongue and throat showed no departure from the normal condition. The redness gradually disappeared during the next two days, but the prurigo was sufficiently marked to be uncomfortable until the 22d. The attack was followed by moderate, flaky desquamation of the epidermis. No other probable cause than the quinine could be ascertained.

CASE III.—W. H., a student, nineteen years old, was not feeling well when, on May 16, 1891, he went to Philadelphia to visit friends. "Sunday night, noticing symptoms due to a cold, he took grs. x of quinine sulphate. In a few minutes he began to itch excessively all over the body. This was soon followed by nausea and repeated vomiting. He also had several diarrheal movements. During the vomiting he experienced a prolonged and rather severe chill. Later, after the nausea had subsided, he was hot and feverish, with some perspiration." On the following morning his Philadelphia friends noticed a rash on his face and neck; but there was no trace of this when I saw him some hours later, nor had he at that time any fever, prurigo, or symptoms of an exanthem.

I include this case with the others, although it did not occur while the boy was under direct observation all the time, as was the case with Nos. I. and II., and hence there was not the chance for certain exclusion of other agents than the drug.

Dr. Allen J. Smith has been elected Professor of Pathology in the University of Texas.

A CASE OF IMPACTED FECES; LAPAROTOMY; DEATH.

BY J. HERBERT DAREY, A.M., M.D.,
OF GRANGER, MINN.

On the 20th of May, 1891, I was called to see Annie M., a little girl ten years of age, on account of a tumor that her parents had discovered in the left inguinal region. She had a history of having had the "grip" last January, and of having ever since a pretty constant and profuse diarrhea that nothing seemed to check. She had considerably run down in flesh, but continued to go to school. At times she would have severe attacks of cramp that doubled her up "like a jack-knife." Otherwise the personal and family history was good.

On examination a hard, nodular, freely movable, flattened tumor, painful on pressure, the size of an orange, was found in the left inguinal region. I advised a consultation with Dr. Kessel, of Cresco, which was agreed to by the parents. We suggested an operation for the purpose of finding out the nature of the tumor, and removing it, if possible. We had an idea that we should probably find a dermoid cartilaginous cyst, with a long pedicle, as the tumor was very freely movable.

On the 5th of June, after thorough preliminary antiseptic precautions, I performed a laparotomy, assisted by Drs. Kessel and Connolly. Ether was used, with a little chloroform at times, when the patient would not take the ether well. An incision from the pubes to the umbilicus was made, and after careful dissection through the sheath of the rectus and the aponeurosis of the transversalis muscles, the peritoneum was opened. The first thing that presented itself was the descending colon, filled full of hard, impacted feces. A loop of the colon was drawn out of the abdomen, and still a tumor could be felt from the outside. Upon exploring further, this tumor was found to be another loop of intestine, with impacted feces in it. The abdominal cavity was carefully explored, but nothing further could be found. The colon, from the sigmoid flexure for a distance of nine inches upward, was filled full of hard feces, and distended to a size of two and a half inches in diameter. The fecal mass in the center was about the consistence of rather stiff putty; but at both extremities, and particularly the lower one, it was so hard that no impression could be made in it with the fingers. It felt as hard as a stone. The abdomen was then sewn up with five deep and five superficial sutures, and the patient put to bed with hot-water bottles around her. The wound was dressed with a little iodoform and bichloride gauze, a good pad of absorbent cotton, and a roller bandage over all. She came out of the ether well. The temperature in the evening was $99\frac{1}{10}^{\circ}$, the pulse 110. She made a good recovery from the operation. On the sixth day she had an elevation of temperature to $101\frac{2}{10}^{\circ}$, due to a very profuse diarrhea.

The superficial stitches were removed on the sixth day, and the deep ones on the ninth. From the fourteenth to the seventeenth day she had an elevation of temperature that looked on the chart very like the rise of temperature in typhoid fever— 1° higher every evening, with a good remission in the morning. The highest point the thermometer indicated was $103\frac{1}{2}^{\circ}$. This rise disappeared by lysis, and she seemed to be doing nicely. Two

weeks after the operation, I began to use injections with the rectal tube and the syringe to try to soften and dislodge the mass from below. The method I followed was to inject a half-pint of fresh ox-gall to soften the mass, and in half an hour to follow it up with a quart of warm water. It seemed to work very well. Every day some fecal matter, in the form of little, hard pellets, would come away that looked like the hard mass softened down. On the twenty-third day fully a pint of softened feces came away, and I was getting greatly encouraged and hopeful that I would succeed in removing the whole mass in time. The patient was doing remarkably well, too, sitting up in bed a little, writing letters, etc. But on the afternoon of the twenty-fourth day she began to vomit, and her temperature ran up to 102°. I gave a hypodermatic of morphine, $\frac{1}{4}$ grain, and the next morning it fell to 100°, pulse 136, feeble and compressible. I had a consultation with Dr. Kessel. There was a good deal of tympanites, the abdomen was extremely tender to the touch. The hypodermatic of morphine quieted her stomach. I gave some bismuth subnitrate, three-grain powders, every two hours. After consulting with Dr. Kessel, we put her on fifteen drops of laudanum every hour. I stayed with her through the night, and gave the medicine myself. The respiration had been 40 to the minute, and under the laudanum I reduced it to 20. But the pulse did not come down much, staying over 100 all the time. Gradually she failed, and died at 2.30 A.M., on the twenty-fifth day after the operation.

This was a very instructive case to me. The operation was, I think, fully justifiable to determine the nature of the tumor. The profuse diarrhea was very misleading, and the tumor itself was so extremely hard that we never suspected impacted feces. In fact, I don't see how a diagnosis could have been made without the operation. That she had fully recovered from the operation is proved by the time that had elapsed before the fatal peritonitis set in. The only wonder is that with so large an impaction in the bowel it had not occurred months before.

CURRENT LITERATURE.

SPECIFIC GRAVITY OF THE BLOOD IN DISEASE.

QUESTIONING the reliability and practicability of the methods of determining the specific gravity of the blood that have hitherto been employed, SCHMALTZ, of Dresden, has adopted the pyknometric method as the most exact. For this purpose he employs capillary tubes of special form, with a capacity of about one-tenth of a cubic centimeter. In one case the specific gravity of the blood obtained by venesection, taken with a large instrument, was 1040.98, and with the capillary instrument 1041.48. As a result of 55 examinations of his own blood, and of examinations of the blood of 20 persons of both sexes, Schmaltz has found that the density of the blood is very little, if at all, influenced by taking food or fluids (including a quart of physiological salt solution), by intense bodily exertion, and the development of hyperemia of the skin at the point from which the blood is to be drawn. The specific gravity of his own blood was somewhat higher in the morning than later in the day, the greatest

difference being included between 1056 and 1062.1, and being apparently independent of food and drink. The average specific gravity of the blood of 8 men was 1059.1, and of 12 women, 1056.2, showing a lower range for women than for men. The specific gravity remains fairly constant in healthy persons.

Schmaltz has tested the specific gravity of the blood of 95 patients, mostly women. 29 were chlorotic women with anemia, more or less acute, without known cause. In 9 of these the specific gravity of the blood fell below 1040, and in 2 below 1035. In the remaining 18 cases the specific gravity ranged from 1035 to 1049.

In 21 cases, existing anemia was known to have been a result of hemorrhages and severe blood-diseases. The figures obtained were higher than in the case of the chlorotics; 2 patients died; 1 had leukemia and endocarditis (sp. gr. 1034), and one septicemia and endocarditis (sp. gr. 1030). In 1 case of hematemesis, the specific gravity was 1031; in 1 of carcinoma of the stomach and liver, 1039, and in 1 of incipient phthisis it was 1036. On the other hand, in a case of severe metrorrhagia, in which the patient, who, a short time before the blood was examined almost died in collapse from hemorrhage, and was extremely anemic, the specific gravity of the blood was 1042. In the other cases—heart disease, Bright's disease, typhoid fever, etc.—the specific gravity ranged from 1039 to 1049.

In a series of 33 cases, including one very anemic patient, all of the organs of whom were healthy, cases of dilatation and of ulcer of the stomach, tertiary syphilis, progressive phthisis, valvular lesions of the heart, diabetes, marasmus, articular rheumatism, and 2 convalescent cases, one of pleurisy with effusion, and one of acute bronchitis, the specific gravity of the blood suffered no material diminution, and in 2 or 3 cases was even abnormally high—1063 (progressive phthisis and heart-disease). Some of these cases lend support to the view of Oppenheimer, that when the proportion of hemoglobin and the specific gravity are normal, though the patient be anemic, there must be an abnormal distribution of the blood. It must be borne in mind that in some cases the specific gravity of the blood rises during inanition. In other cases, conditions of blood-stasis, such as occur in phthisis and in heart-disease, raise the specific gravity in the areas of stasis.

In 26 cases Schmaltz compared the specific gravity of the blood with the percentage of hemoglobin and with the corpuscular richness of the blood. He found that a lowering of the specific gravity goes hand-in-hand with a diminution of hemoglobin, while the specific gravity is in a large degree independent of the number of red blood-corpuscles.

In 4 cases of chlorosis cured, the specific gravity rose until it became normal; in other cases it increased, but failed to reach the normal without the disappearance of the other symptoms.

As a result of his studies, Schmaltz formulates the following conclusions: Under normal conditions the specific gravity of the blood in man varies within narrow limits; as a rule it diminishes considerably in anemic conditions, especially in chlorosis and diseases of the blood proper; the density of the blood is chiefly determined by the quantity of hemoglobin present, while it is in a large measure independent of the number of

red blood-cells; with improvement in the anemic condition the specific gravity of the blood rises, and with complete recovery attains the normal. It seems, therefore, that the specific gravity of the blood is an accurate index of the condition of the disease; when the circulation is retarded in the extremities—for example, in diseases of the heart and lungs—the specific gravity of the blood is not rarely elevated, and may, in spite of persisting anemia, be found normal.—*Deutsche med. Wochenschrift*, No. 16, 1891.

[Schmaltz describes his "capillary pyknometer" and his method of using it in the *Deutsches Archiv für klin. Medicine*, Bd. xlvii. 145. A capillary tube containing distilled water is weighed, the water is expelled and the tube again weighed—the difference in weight, of course, is the weight of the water. In the same way the weight of a capillary tubeful of blood is obtained. The weight of the blood and of the water being thus known, simple division gives the specific gravity.]

MEDICAL PROGRESS.

The Abortive Treatment of Buboos.—WELANDER (*Archiv f. Dermatol. und Syphilis*, No. 3, 1891) reports a second series of fifty-nine cases of bubo treated by means of injections of benzoate of mercury. In all, he has now treated one hundred buboes in this way with thoroughly satisfactory results in seventy-eight. He uses the following formula:

R.—Hydrargyri benzoatis . . . gr. v.
Sodii chloridi . . . gr. jss.
Aquæ destillata . . . fʒj.

Sig.: ℥xv as an injection.

As a result of his observations he has arrived at the following conclusions:

1. If the bubo display a virulent tendency, the injection does not affect its development, and suppuration occurs.

2. When decided fluctuation exists and the skin is thin and cyanotic, the injection can only hasten the disappearance of the infiltration. As a rule, the bubo must be opened.

3. If fluctuation is considerable in degree, but the skin, though red, is thick and well nourished, the chances are good that an injection into the adjacent infiltrated area will (possibly in 50 per cent. of cases) obviate the necessity of opening the bubo.

4. If there is little or no fluctuation, it is highly probable (possibly in 90 per cent. of cases) that, even though fluctuation subsequently becomes decided and a few drops of pus ooze from the site of puncture, the bubo will disappear, leaving no trace of a cicatrix.—*Monatshefte f. prakt. Dermatol.*, July 15, 1891.

Dentition and Infantile Disease.—BROTHERS (*Archives of Pediatrics*, August, 1891) maintains that dentition is rarely or never a cause of death. He believes that dentition may be precocious or retarded in otherwise healthy children or in families. In the majority of healthy, breast-fed infants the eruption of the first teeth begins at six and a half months and is completed at thirty months. In children brought up on a mixed

or artificial diet, primary as well as secondary dentition is distinctly retarded. Congenital disease—tuberculosis, syphilis, endocarditis—seems to retard dentition. Rickets has a pronounced retarding influence upon dentition. Scrofulosis seems to accelerate the eruption of the first teeth, but does not affect subsequent dentition. In cases of defective cerebral development, as in idiocy, the whole process of dentition is retarded. Chronic disease retards the eruption of the first teeth, but does not influence subsequent dentition. In marantic children, primary dentition is precocious, but secondary dentition is delayed. Epileptics seem to have their first teeth early.

Cæsarean Section for a Giant Infant.—RACHEL and NEUMER (*Répertoire d'Obstét. et de Gynéc.*, May 25, 1891) report the case of a woman, forty years old, the abdomen of whom, in the twelfth pregnancy, was enormously distended. The labor not progressing, version was attempted, but the fetus would not pass the superior strait. Disarticulation of the leg, preparatory to evisceration, was attempted, but was unsuccessful. Finally, Cæsarean section was decided upon. The mother died soon after the extraction of the fetus. The latter, almost exsanguinated as a result of the amputation, weighed twenty-two and a half pounds. The parents were not unusually large. The only explanation of the great size of the fetus lay in the age of the mother and the number of pregnancies and in the fact that the fatal pregnancy had passed one month beyond term.—*Lyon Médical*, July 12, 1891.

Hypnotism.—In a paper read before the Colorado State Medical Society, ESKRIDGE (*New York Medical Journal*, August 1, 1891) stated that hypnotism is real and subjective and not dependent upon any mysterious influence of the hypnotist over the subject. The therapeutic value of hypnotism is governed by the mental impressions made during hypnosis, a state of increased impressionability. Much that is accomplished by hypnotism may be accomplished by repeated impressions without hypnosis. Hypnotism carries with it certain dangers to the hypnotist, to the subject and to the community, to be obviated by proper precautions. It remains to be determined whether or not the therapeutic value of hypnotism is greater than the unavoidable dangers of its application. The practice of hypnosis should be under state control and restricted to physicians and other scientific investigators.

Cerebral Syphilis.—As a result of his observations during a long experience, TARNOWSKY (*Archiv f. Dermat. und Syphilis*, No. 3, 1891) excludes progressive paralysis and tabes from among the manifestations of syphilis of the nervous system. It is his view that the debilitating influence of syphilis merely prepares the way for the development of progressive paralysis and tabes in those in whom there exists a congenital predisposition to these diseases. Tarnowsky makes the further proposition that if, in cases of syphilis with nervous manifestations, tabes and progressive paralysis can be definitely excluded, 90 per cent. will be cases of cerebral syphilis, in the majority of instances susceptible of cure.—*Monatshefte f. prakt. Dermat. und Syphilis*, July 15, 1891.

Rupture of the Thoracic Duct.—EYER (*New York Med. Record*, August 1, 1891) has reported the case of a railway brakeman, who, while engaged in work, was severely squeezed. Right-sided pneumonia subsequently developed. On the seventeenth day after the injury evidences of deep-seated suppuration were apparent near the anterior superior spine of the right ilium. An incision disclosed a fistulous tract, from which emanated a discharge having a fecal odor and appearance. In the course of a few days the offensive odor disappeared. The discharge was now opaque and milky. An intestinal fistula was diagnosed. Emaciation progressed with extreme rapidity. Thirty-eight days after the reception of the injury the patient died. At the autopsy an opening was found in the thoracic duct at the level of the diaphragm.

Removal of the Apex of the Lung for Tuberculosis (*Gazette hebdomadaire de Sci. Méd.*).—In a case of early tuberculous disease of the apex of the right lung DR. TUFFIER has successfully resorted to operative measures. The means adopted, based upon experiments made upon a dog, consisted in a simple incision through the second intercostal space anteriorly. Afterward the parietal pleura was divided, which induced a kind of sub-pleural pneumothorax; the apex of the lung became reduced in bulk sufficiently to be easily drawn through the wound; it was then cut away by the écraseur, and the stump sutured to the intercostal incision to prevent retraction of the lung. Dr. Tuffier exhibited the patient, who had progressed very favorably after the operation.—*Provincial Medical Journal*, July 1, 1891.

Chylous Ascites.—VALI (*Wiener med. Presse*, July 12, 1891) presented to the Royal Society of Physicians, at Budapest, a woman fifty-eight years old, who, following an attack of fever a year previously, had complained of pain in the hepatic and inguinal regions. Several months later, enlargement of the abdomen was observed. On puncture for the third time, after the lapse of varying intervals, three gallons of a yellowish-white, translucent, milky fluid, oily to the touch, was evacuated, on the surface of which, after standing, a creamy layer formed. The subjacent fluid was alkaline, of a specific gravity of 1013.3, and made up of 964.8 parts of water and 35.2 of solids (including albumin, fat, salts, peptone, sugar, and urea). Microscopically, the granular sediment was found to contain fat-globules, lymph-cells, and blood-cells.

Post-apoplectic Hemianopsia.—LEYDEN (*Wiener med. Presse*, July 12, 1891) reported to the Society for Internal Medicine, at Berlin, the case of a woman sixty-nine years old, with left hemiplegia, left ptosis, and conjugate deviation of the eyes and head to the right, who, for three days presented the hemianoptic pupillary reaction or immobility. The pupil contracted on illumination of the intact half of the retina, but not on illumination of the anesthetic half. Wernicke has demonstrated that this peculiarity depends upon a lesion interrupting the pupillary reflex arc in front of the corpora quadrigemina. When the lesion and consequent reflex interruption are behind the corpora, the pupils react. In the case in question, the autopsy confirmed the accuracy of

the observation—a lesion was found in the quadrigeminal region.

The Elimination of Micro-organisms in the Sweat.—In a case of chronic pyemia, BRUNNER (*Berliner klin. Wochenschr.*, No. 21, 1891) found the staphylococcus pyogenes albus in the blood; and after the administration of diaphoretics, he was able to demonstrate the presence of the same organism in the sweat. Stimulated to further investigation, he inoculated a young pig with cultures of the staphylococcus aureus, a cat with anthrax bacilli, and another pig with the micrococcus prodigiosus. In each case Brunner was able to demonstrate the presence of the respective organism in the sweat, and in the last, in the saliva as well.

The Etiology of Erysipelas.—As a result of his observations, and from a study of the literature of the subject, JORDAN (*Archiv für Chirurgie*, 42, ii., 1891) has concluded that erysipelas is etiologically not a specific disease; as a rule, it is caused by the streptococcus pyogenes, but it may also be caused by the staphylococcus pyogenes. The etiological agent probably finds its way into the blood in every case. In this way metastases may result: the pyemia of erysipelas is thus primary—dependent upon the erysipelas coccus. The variability of action of the pyogenic cocci depends upon their localization and variations in their virulence—thus quantitative.

The Conservation of Living Malarial Parasites.—Failing in his efforts to cultivate the parasites of malaria in artificial culture-media, ROSENBACH (*Berlin klin. Wochenschr.*, August 24, 1891) endeavored to reproduce the natural conditions of life of the organisms. To accomplish his purpose he used leeches, which he applied in the splenic region in cases of malaria, and found that by opening the leeches at the end of forty-eight hours the apparently normal blood containing parasites could be obtained. It even appeared that in the interim the parasites underwent some changes of development.

Idiocy and Hermaphroditism.—MORAVCSIK (*Wiener med. Presse*, July 12, 1891) presented to the Royal Society of Physicians, at Budapest, a well-developed child eleven years old, of doubtful sex, with a head smaller in all dimensions in proportion to the size of the body, and an especially narrow forehead, and with a well-developed penis at the upper angle of the labia. The child had been educated as a girl. Its voice and manner were rather those of a boy. Its mental development was slight. Writing was done with the left hand and from right to left.

Inhalation of Oxygen in the Cyanosis of the Newly Born (*Bulletin Obstétricale*).—After resorting to various measures for the relief of cyanosis, DR. BONNAIRE adopted the plan of conveying through a tube a current of oxygen to mix with the atmosphere surrounding the child. The general condition improved rapidly under this plan of treatment. The remedy appears to combat the secondary conditions of respiratory weakness and general asthenia. Artificial warmth is a necessary condition for the administration of oxygen to be successful.—*Provincial Medical Journal*, July 1, 1891.

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Subscription Price, Including Postage in North America.

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SATURDAY, SEPTEMBER 19, 1891.

THE TREATMENT OF INFECTIOUS DISEASES.

THE richest fruits of the science of bacteriology are yet to be realized. We have already learned much in the way of rational prophylaxis, but there is much more to be learned, both as to the prevention and the cure of disease. It would be folly, however, with the unravelling of the many knotty problems in the causation of disease, to anticipate either a therapeutic revolution or revelation. On the contrary, it is probable that many current methods of treatment (empirical though they may be) will be shown to be useful in virtue of their bactericidal activity. In illustration, we need but advert to the use of mercury in syphilis, and of quinine in malarial fevers, and we have no more perfect types of specific therapeutic measures than these drugs. Though the one disease is not yet generally admitted to be dependent upon a bacterium, the evidence is conclusive that the other is a result of the presence of a parasite in the blood. Our new knowledge, however, does not alter our therapeutics. If syphilis is a microbic disease, it can occasion no surprise that such a powerful microbicide as mercury should be an effective therapeutic agent in syphilis. It is known that quinine inhibits the corpuscular activity of the

blood and that it is antiseptic. With the parasitic nature of malarial diseases established, the usefulness of quinine in these diseases needs no further explanation. At this juncture we are confronted with the fact that germicidal remedies cannot be interchangeably applied in the treatment of germ-diseases. In other words, a remedy of especial utility in one condition may be quite nugatory in another. Thus mercury has no curative effect in malarial disease, quinine none in syphilis. It will still be necessary to determine, perhaps empirically, the special agent suitable for the individual disease, as well as the precise mode of action in the cure of each case.

What has already been said will let us now take up for consideration the *rationale* of the treatment of erysipelas. The most popular remedy in the treatment of erysipelas is perhaps iron and quinine in combination, of which it must be admitted that it is reliable and efficacious. Another remedy is pilocarpine, injected subcutaneously, which acts with almost specific promptness and efficacy. A third remedy to which we shall refer is the cyanide of mercury, which, injected subcutaneously, close to the seat of disease, has in the hands of some given gratifying results. The mode of action of quinine and iron, and of the cyanide of mercury, needs no further elaboration.

We know that physiologically pilocarpine is a powerful diaphoretic. This property depends not only upon the cutaneous hyperemia developed, but also upon a special influence upon the secretory apparatus. As a result of both of these conditions, the skin and subcutaneous tissues are flushed with blood and excessive exudation. The vital activity of the streptococcus of FEHLEISEN is heightened. Living faster, it dies faster. The increased production of the excrementitious products of bacterial activity causes the speedy death of the organism and the cessation of the disease. Add to this the fact, now demonstrated beyond cavil, that bacteria are eliminated in the perspiration, as well as in the saliva and in the urine, and we require no more to make clear the usefulness of pilocarpine in erysipelas, though it is not impossible that the antiseptic qualities of the body-fluids, with which the tissues are deluged, play some part in the limitation of the disease.

In this connection another fact presents itself. The intimate relation between erysipelas and parenchymatous nephritis is well recognized. Not only

does nephritis appear as a common complication of erysipelas, but those with nephritis show a special predisposition to the development of erysipelas. That there should be an infectious nephritis (microbic or toxic) in association with erysipelas may be readily understood, while it may readily be conceived that the defective elimination of excrementitious products on the part of a kidney damaged by disease will throw additional work on the cutaneous excretory apparatus, with a diminution of resistance or the establishment of conditions favorable to the invasion and propagation of the streptococcus.

COMMERCIAL ENTERPRISE AND PROGRESS IN THERAPEUTICS.

THE enterprising spirit of the modern drug trade has had many good results, some evil ones. Even to its good results there is a sad side; and the observant student of contemporaneous medical history must at times entertain grave apprehensions as to the future of therapeutic science among the rank and file of American physicians. Let us look at one or two striking facts. More than thirty years ago, BENJAMIN WARD RICHARDSON introduced hydrogen dioxide as a therapeutic agent, and during the intervening years he has at intervals worked out and published its manifold uses. Other reliable writers made occasional report of the action of the drug, or enumerated it in lists of agents applicable in certain conditions. It attained, however, in America at least, but a limited repute and employment. Within a few years—less than a decade—a manufacturing chemist has largely advertised in the reading and other columns of medical journals and by means of circulars, the peculiar virtues of his brand of the drug. Immediately we find a host of writers springing up to quote from one another the statements of this manufacturer and the excellence of his product. Out of a dozen or two of these, one may vaguely refer to RICHARDSON, but none seems to be at all aware of the thorough character of that author's researches; and some propose as novel, expedients that he has long since tried and either approved or rejected.

The obvious state of affairs is that the little knowledge these writers have, comes from the circulars of the manufacturer and not from the teachings of the physician.

Very recently a manufacturing firm has prepared and circulated very extensively a secret mixture of

coal-tar products, under a name fashionably beginning with *Anti*. Nobody knows anything about this powder except what the manufacturers tell him. But we find some apparently reputable physicians rushing into print to extol its superlative virtues in every imaginable and unimaginable painful or febrile affection; and many others must be experimenting with it upon the lives of their patients, or the manufacturers would not find it pay to distribute their pharmaceutical and literary products so extensively as they are doing.

Thus we see one of the most useful of therapeutic agents, introduced after careful and thorough investigation by a leader of medical thought, practically ignored until fathered by a manufacturer; and then adopted not through the reports of the scientific investigator, but through the commercial enterprise of the manufacturer. On the other hand, we see an unknown, possibly dangerous and probably worthless, mixture, extensively used without any preliminary scientific investigation or reliable clinical report, simply and solely on the merits of its advertising.

"THE PEOPLE'S BATH."

IF it be a pleasure to give pleasure to others, how great must be that of the New York gentleman who sent \$200 to be used in supplying free baths to the unwashed boys of New York. He gave 4000 boys an opportunity that they greedily seized upon of getting an excellent and decent washing. And when one considers that the good indirectly done by these baths is far greater than the pleasure, the originator of this movement must feel that he has certainly accomplished a great reform and work in the world. DR. BARUCH would be a little more than human if he were not elated at this practical demonstration that all "hobbies" are not "mere theories," and that the "cold-water hobby" is one that well ridden will do great good to a whole community. He has made it possible for a New York working-man or boy to have the best kind of a bath, cold or warm, with pure water, in a private room, with a new cake of soap and a clean towel—"all for five cents, and if the five cents is hard to find, the bath may be had scot-free."

Such things as this are bright compensations for many of the evils of civilization. Every city awaits a duplication of this noble charity, and each of us should try to bring it about.

SOCIETY PROCEEDINGS.

SEVENTH INTERNATIONAL CONGRESS OF
HYGIENE AND DEMOGRAPHY.*Held at London, August 10 to 17, 1891.*

(Continued from p. 310.)

In the Section of Preventive Medicine, DR. EDWARD BALLARD considered the subject of "Meat Inspection and Food Poisons." He reported twelve instances of poisoning by articles of food. The symptoms were those due to a virulent chemical poison produced by a microorganism either in the food or in the body of the recipient of the food. The precautionary measures recommended were:

1. Thorough cooking of such prepared foods as ham or bacon.
2. Scrupulous cleanliness and ventilation of places where the food was stored or where pork was salted and dried.
3. The adoption of precautions to prevent the rise into such places of ground-air or the entry of other morbid and unwholesome emanations.

DR. VICTOR VAUGHAN quoted cases from his experience similar to those described by Dr. Ballard, and emphasized the importance of the work that those who were called upon to investigate food-poisoning must do. The method of procedure must be both chemical and bacteriological. A careful and thorough search for inorganic poisons should be made. The germs found should be grown under conditions as nearly identical as those under which the suspected food had existed as could be obtained. Tests should be made, not only for the basic products of putrefaction, but for the bacterial proteids as well. Physiological tests upon lower animals should never be neglected.

DR. ARTHUR RANSOME, F.R.S., read a paper on "The Need for Special Measures for the Prevention of Consumption." That the disease was curable was proved by the facts that (1) the post-mortem examinations of persons dying from other diseases afforded unmistakable evidence in from 25 to 50 per cent. of spontaneous cure of tuberculous disease; (2) by the testimony of many physicians, among whom the speaker was one; he had satisfied himself that in the large majority of cases a fatal issue was brought about not by one or two, but by repeated invasions of the bacillus from an unhealthy environment. That the disease was preventable was shown in (1) the statistics of the British army, in which the mortality from lung-disease had been reduced to one-third or one-tenth of the former rates by attention to drainage and ventilation of barracks; and (2) by the statistical researches of Dr. Buchanan, who had shown that in certain English towns the mortality had been reduced by drainage; and (3) by the reduction in the general phthisis rate from 2.5 to 1.5 per mille since the passing of the Public Health Acts. Since phthisis was curable, and since it was known that many persons did recover from it, the number of susceptible persons must be very large, and the necessity for preventive measures the greater. Tuberculosis was communicated occasionally by direct personal intercourse, more frequently by the milk or flesh of tuberculous cattle, by the inhalation of tuberculous dust, and by residence in an infected house or urban area. As pre-

ventive measures he advocated (1) notification of cases; (2) disinfection of fomites, spittoons, and houses; (3) provision of ample hospital accommodation (by the local authorities) for patients too ill to work; (4) general sanitary measures, including ventilation, drainage, and reconstruction of unhealthy areas.

SIR DYCE DUCKWORTH opened the discussion on "The Relation of Alcoholism to Public Health, and the Methods to be Adopted for its Prevention." He stated that the opinion of the medical profession was that no harm appeared to ensue from alcohol when used legitimately—that is, in small quantities and with meals. Bad (impure) alcohol was harmful. For the careless drunkard stern measures ought to be employed, such as cumulative fines, deprivation of electoral franchise, and corporal punishment. Hopeless cases were those with an ancestry that had abused the use of alcoholic drinks.

PROFESSOR HARALD WESTERGAARD stated that the effect of alcoholism on public health depends not only on the average quantity consumed, but on the distribution of this quantity. In several countries an enormous part of the divorces bear some relation to the abuse of strong liquors. The inmates of poor-houses and lunatic asylums very often are the victims of intoxicating drinks. The large number of police offences and crimes caused by alcoholic excess will show to what an extent in many countries alcoholism claims the attention of the public. He also considered the influence of alcoholism on the mortality-rate, and made reference to the legislation for the suppression of the abuse.

DR. NORMAN KERR said that the evil of intemperance could be remedied (1) By recognizing inebriety as a disease, and drunkenness as very often but an effect or symptom of disease. In the Dalrymple Home, though the previous average term of alcohol-addiction had been nine years, more than one-third of the cases had afterward done well. Penal discipline had been a failure. (2) By amended legislation to provide for (a) the compulsory reception and retention of inebriates too demoralized to apply of their own accord; (b) the reception of voluntary applicants on a simple agreement, without appearance before justices; (c) the care and treatment of the poor and of those of limited means. It would be well also for guardians to have power to pay for the care and treatment of pauper inebriates, and for the authorities to establish special hospitals for the detention and treatment of inebriates convicted of crime. Immunity from the physical, mental, moral, and social ravages wrought by alcoholism could be eventually secured only by general abstention from even the "limited" use of intoxicants; their exclusion from social, political, and sacred functions; and the scheduling of alcoholic beverages as a poison under the Pharmacy Acts, or, by some other legislative enactment, the prohibition of their manufacture and common sale.

DR. ISAMBARD OWEN stated that the conclusions appended to the "Collective Investigation Report on Intemperance" of the British Medical Association clearly stated that habitual indulgence in alcoholic liquors had a distinct tendency to shorten life.

DR. RICHARD SISLEY read a paper on "The Prevention of the Spread of Epidemic Influenza." He contended that influenza spread along the lines of human intercourse, and was not, always at least, wind-borne.

Attention to general hygienic measures rendered the spread of the disease less rapid; quinine was not a certain prophylactic, but there was some evidence in favor of the prophylactic value of the application of a solution of boric acid to the conjunctivæ. The main point to be attended to was the avoidance of infection during an epidemic. He advocated special care to prevent the introduction of the disease into large public institutions in which it was apt to spread rapidly, the closure of elementary schools, and the disinfection of letters and parcels, in addition to personal precautions.

DR. ROBERT W. FELKIN considered "Malaria, Enteric Fever, and Phthisis." He discussed the various reasons for holding that malaria was a definite disease due to the same cause under whatever guise it appeared. He did not believe that typho-malarial fever existed as a separate disease. Black-water fever was, in his opinion, a severe form of malarial fever, and not a definite, distinct disease. There seemed to be a certain antagonism between malaria and phthisis, for wherever malarial fevers were most rife in Central Africa he had never seen a case of phthisis, which was only met with, so far as he was aware, in localities where malaria rarely occurred—namely, at high altitudes.

DR. PROSPERO SONSINO read a paper on "The Most Efficacious Means of Preventing the Spread of Entozoa Diseases in Man." The most important prophylactic measures were those to be taken by the individual. Pure water, cleanliness in the keeping and cooking of food, and personal cleanliness, were points dwelt upon. He insisted on the need of care in making use of special forms of food used by the natives of countries possessing special entozoa. His observations had led him to the conclusion that in hot climates three forms of entozoa—*anchylostoma duodenale*, *filaria sanguinis hominis*, and *Bilharzia hematobia*—were important factors in the production of disease and mortality.

In the Section of Bacteriology, DR. J. BURDON SANDERSON opened the discussion on "Tuberculosis." He formulated the following propositions:

There is no sufficient reason for supposing that in the human adult the introduction of the bacilli of tubercle by enteric absorption is the efficient cause of tuberculosis. In infancy a large proportion of the apparently idiopathic tuberculous diseases of the lymphatic system are probably due to the penetration of bacilli into the organism from the intestine; but the evidence that we at present possess on this subject is not sufficiently precise or extended to serve as a basis for prophylactic action. For this reason the origin of tuberculosis in infancy is a subject that urgently requires investigation.

It has been proved that the ingestion of any material which contains the bacilli of tubercle is a source of risk to the consumer, but the conditions that limit this risk are insufficiently known. It would, therefore, be unjust to enforce the destruction of any specimen of meat apparently healthy, even though it were known to be derived from a tuberculous animal, excepting on evidence given by an expert as regards the particular case that it would be infecting if administered to test-animals.

As regards the duty of the State in relation to the prevention of tuberculosis, what is immediately required is, first, that tuberculosis should be added to the list of dis-

eases regarded by the law as contagious; and, secondly, that an efficient system of skilled inspection should be created. This is desirable, not merely as a first step toward prevention of the sale and consumption of tuberculous meat, but as an indispensable means of acquiring better information than now exists. To be of use it must be conducted by men of technical skill under scientific guidance.

In conclusion, Dr. Sanderson expressed the belief that the consumption of unboiled milk during the years that follow weaning must have its share in bringing about the fatal prevalence of tuberculous disease at that period of life. He held that the sale of contaminated milk ought to be stopped by all possible means.

DR. B. BANG read a paper on "The Alleged Danger of Consuming the Apparently Healthy Meat and Milk of Tuberculous Animals." He maintained that from an economic point of view it was scarcely feasible to interdict the use of milk and meat from tuberculous animals. Milk ought always to be boiled. Difficulty is encountered in the preparation of products derived from milk, such as cheese and butter. To overcome this, the milk is first exposed to a heat of from 140° to 164° F., by which tubercle bacilli possibly present are sufficiently attenuated to be incapable of infecting the alimentary canal. As, however, many people object to the taste of boiled milk, it becomes an important question to determine whether the milk of phthisical cows is really a source of danger in the majority of cases. Dr. Bang has determined that when the udder is affected with tuberculosis there are usually numerous bacilli in the milk, which is consequently extremely dangerous. But he also finds that mammary tuberculosis is not so common as was at one time supposed. He maintains that although in many cases the milk from phthisical cows is not virulent when the mammary gland is unaffected, it is in a certain proportion of cases, and should always be looked upon with suspicion, and it is absolutely necessary to take prophylactic measures against the use of such milk. With regard to meat, flesh itself very seldom contains any tubercle. Nevertheless it has been proved by a number of experiments that muscle-juice may contain tubercle bacilli. The eating of uncooked meat should be discouraged; but the best means of avoiding danger to the health of man is to take all possible measures for preventing the propagation of tuberculosis among domestic animals.

PROFESSOR ARLOING held that, with few exceptions, the total condemnation of tuberculous meat was necessary. The flesh of tuberculous animals should be suspected as dangerous to health, especially as meat is often undercooked, the bacilli remaining pathogenic.

PROFESSOR MACFADYEAN and DR. WOODHEAD read a paper on "The Transmission of Tuberculosis to Man by Means of Flesh and Milk Derived from Tuberculous Animals." They held that intestinal and mesenteric tuberculosis was most common in children shortly after weaning, when cows' milk was substituted for mothers' milk. In these cases the point of entrance was probably by the intestines. They had concluded that in some cases at least the tubercle bacilli had passed from the intestine into the mesenteric glands, without leaving any trace of lesion to indicate the point of entrance. Tubercle bacilli are undoubtedly sometimes present in the milk from

tuberculous cattle, especially when the udder is affected. They held that it is not less than criminal to give such milk to delicate children or to children with intestinal catarrh.

DR. METSCHNIKOFF and DR. ROUX presented a joint paper on "The Changes that Take Place Around the Tissues of Tubercle Bacilli." They stated that the process of recovery consisted in the development of concentric layers of dense inflammatory tissue around the bacilli, which eventually led to their absorption, the inflammatory tissue itself finally undergoing a process of calcification.

PROFESSOR EHRLICH gave Koch's views regarding tuberculin. He stated that the results obtained were exceedingly favorable, and that in most of the cases in which he had failed to obtain equally good results it was because he had used too large doses of tuberculin. The principle of cure rested on the local effects that tuberculin exercised on the specifically affected tissues; and the violent inflammatory reaction, passing to necrosis, was neither desirable nor necessary; but, on the contrary, slight and often rapid stimuli would give rise to cicatrization of the tuberculous centers, so that the essence of this method of treatment was to retain as long as possible the specific excitation of the tissues, and not to do away with these, as was the case if large doses were used. Successful results have been obtained by the use of repeated minute doses of tuberculin that were only very gradually increased. It should be specially noted that the pathological signs found as the result of the action of tuberculin were always produced by large doses.

DR. BEHRING read a paper on "Disinfection in the Living Body." He stated that there are four possible ways in which it is conceivable that disinfection within the body may be effected: 1. By killing the disease-producing germs. 2. By hindering their growth. 3. By counteracting their disease-producing properties—pathogenic organisms losing their power to produce poisonous products. 4. By antagonizing the action of or destroying altogether the various toxic products originated by the bacteria.

He detailed the method of conferring upon animals immunity from diphtheria. He held that the curative power of the blood was not dependent upon its living elements, or, at least, is not limited to these. It is rather to be traced to the circumstance that the extravascular blood and the blood-serum of immune animals possess the property of destroying specific poisons without destroying the bacilli. He concluded by stating that perhaps in the general treatment of infectious diseases the same principle may be found to apply as Lister has with such good results applied in the local treatment of infectious wounds—namely, to remove or to render harmless the various causes of disease while leaving the living cells of the tissue in place.

The PRESIDENT (SIR JOSEPH LISTER) said that the phagocyte naturally existed where it could obtain nourishment, and therefore something besides chemical action must be looked for, as there was a great difference between living and dead tissues.

In the Section of the Relations of the Diseases of Animals to those of Man, DR. OSTERTAG discussed "Milk Diseases and the Regulation of Milk Supply." He insisted that the State should see that only pure milk

entered the market. The following kinds of milk ought to be excluded: (1) Milk which, without being necessarily prejudicial to health, was peculiar in color, taste, or consistence (nauseous milk); (2) all milk that was prejudicial to health, or which was suspected on good grounds of being so. The milk of animals that had been fed on poisonous fodder, or that have been treated with certain medicaments, and of those suffering from tuberculosis, malignant pustule, cow-pox, apthæ, or general illness in consequence of some process inducing ulceration, must be regarded as prejudicial to health. In order to guard against these dangers it was requisite (1) that all dairy farms be licensed; (2) that all animals kept for milking be examined by a veterinary surgeon from time to time; (3) that the owners of dairy farms be bound to provide only good undamaged fodder, and to give immediate notice of the illness of any milch cow to the attending veterinary surgeon, and, until he gave leave, not to send the milk of the diseased animal to market; (4) that the business of milking be performed with the most punctilious cleanliness, and that no person suffering from any infectious illness be employed to milk; (5) that the mixed milk obtained by milking be cooled and stored in special rooms, not in living or sleeping-rooms; (6) that it be transported only in suitable vessels; (7) that during the prevalence of apthæ only boiled milk should be brought into the market, whilst all milk which must be considered nauseous or injurious should be excluded from the provision market; at the outbreak of any epidemic in a house in which dairy farming was carried on, the sale of milk should be forbidden; (8) in obtaining the so-called "milk for children," especially strict regulations ought to be carried out as to the feeding of the milch cows, cleanliness in milking, and the cooling and proper mode of transport of the milk.

PROFESSOR BROWN pointed out that milk was more frequently contaminated by the hands of the milkers and the excreta from the cows than by disease-producing germs, and he gave a short account of the number of different microorganisms which he had detected in milk collected in the most careful manner from healthy cows.

MR. FRANCIS VACHER read a paper on "The Inspection of Meat with Regard to the Prevention of Disease." He proposed: 1. The general provision of public abattoirs. 2. Closing of private slaughter-houses. 3. Licensing and registering of all butchers and their premises. 4. Appointment of competent inspectors of meat. 5. General systematic inspection of animals and meat intended for food. 6. Appointment of competent assessors to sit with magistrates and assist them when necessary in the hearing of cases relating to diseased meat.

DR. W. MARCET read a paper on "The Effects of the Respiration of Carbonic Acid on Man." His conclusions were as follows: 1. That when air containing an excess of CO_2 is breathed, the gas accumulates rapidly in the blood, and under such a condition the phenomenon of nutrition is more or less interfered with, and also that people working in ill-ventilated rooms and buildings should, toward the preservation of their health, sleep in as pure an atmosphere as possible, where they will rid their blood of the carbonic acid absorbed in the day-time. 2. That the effects produced by inhalation of carbonic acid gas depend greatly on the rapidity of the exposure. The sudden inhalation of air containing a

large proportion of the gas may produce rapid insensibility and death, while this same air might have been breathed for some time with a certain degree of impunity had the carbonic acid present been increased gradually.

3. That when life is threatened by the inhalation of carbonic acid there is no reason to despair of artificial respiration so long as the heart is beating; the gas will diffuse rapidly from the blood into the air with which the lungs are inflated, and thus be carried out of the body.

SIR ARTHUR MITCHELL and DR. BUCHAN read a paper on "Influenza and Weather of London." They found a winter maximum of mortality and a summer minimum. During epidemics, deaths from influenza accounted for only about one-seventh of the increase in the mortality. The increase was due to the increased number of deaths from bronchitis, pneumonia and phthisis, diseases of the circulatory system, and enteritis. The heaviest contribution to the death-rate was made by diseases of the respiratory apparatus, though the temperature was high and there were no fogs—evidence that something of an exceptional character was operating to increase the number of deaths from diseases of the respiratory organs.

DR. V. LOGIE read a paper on "The Prophylaxis of Pulmonary Tuberculosis and the Mortality from Phthisis in the Belgian Army." He contended that all men who appeared weak in constitution should be excluded from the army. The effect of crowding, which was the inevitable characteristic of the soldier's habitation, should be neutralized as much as possible. In the future there would have to be separate day and night premises, all access to bedrooms being forbidden after a certain hour—fixed as early as possible—and the rooms thoroughly ventilated until the evening recall. A prize should be given for cleanliness of body, clothes, and room. Clothing should be adapted to the season, so as to diminish the risk of taking cold. The food should be improved and more varied. All administrative formalities should be fulfilled as rapidly as possible, so as to leave in barracks as short a time as possible all men proposed as pensioners on account of consumption, and to isolate them meanwhile more than is done. The medical officer should give special attention to men who seem to have been getting pale and thin for some time. The men should be made to understand as much as possible that if military life strengthens and invigorates the body, it also makes it liable to different diseases, and particularly to consumption, to escape which they must avoid all excess, uncleanness, etc. The ravages committed in armies by consumption should be made as well known as possible to those whom it concerns.

In the Section of State Hygiene, SIR HENRY THOMPSON inaugurated the discussion on the subject of "The Disposal of the Dead." He said that infectious diseases were highly communicable after as well as before death. Destruction by fire was the only perfect and absolute means of immediate disinfection, of avoiding the contamination of water-supplies, and of preserving the best areas for habitation or the production of food. When cremation could not be performed he urged the burial of persons dying of infectious diseases in capacious coffins filled with quick-lime.

MR. F. SEYMOUR HAYDEN followed with a paper in

which he said coffins of any kind were worse than useless, but if employed at all should be of wicker or of the most perishable materials. But cremation he would denounce in the strongest terms as "a direct and potent incentive to crime."

A resolution in favor of cremation as a rational proceeding, especially called for in cases of contagious disease, was carried, with only four dissentients.

In the Section of Demography DR. FELKIN opened the discussion on "The Suitability of Tropical Highlands for European Settlement." He divided the tropics into three vertical zones of climate, each of which had its own peculiarity with regard to the presence or absence of disease. For the permanent residence of Europeans in the tropics a comparatively high altitude was requisite. In the upper or cold zone of the tropics there was a tendency to plethoria, and the disorders were of an inflammatory character. Diseases of the respiratory and circulatory organs were relatively common, whilst malaria, yellow fever, cholera, phthisis, dysentery, and hepatitis were almost entirely absent. In the middle zone the seasons exerted an influence, and consequently the presence and prevalence of disease fluctuated. As a whole, however, diseases in this region (having a mean annual temperature of from 41° to 73° F.) were less virulent in character. The lowest or hot zone was the typical tropical disease zone, and here anemia, malaria, diseases of the gastro-intestinal tract, hepatitis, dysentery, diarrhea, beri-beri, dengue, and yellow fever were met with. Typhus fever, plague, goiter, cretinism, and for the most part diseases of the kidneys, were not met with. It was found that an altitude of from six to ten thousand feet was necessary for the British people and North Germans to reside permanently in such districts, and even there the areas for colonization must be carefully selected, and all sanitary precautions taken. Although altitude might give an invigorating climate, there must always be certain elements detracting from its value, namely, the powerful sun, the rarefied air, and the absence of a well-marked summer and winter.

DR. KÖRÖSI read a paper on the "Influence of Parental Age on the Vitality of Children," in which he said that girls should not be married before the age of twenty. The most vigorous children issued from fathers of from thirty to forty years of age, the children of younger and older fathers dying somewhat oftener through uterine causes. It was curious, however, that when the fathers were advanced in life—about sixty years of age or more—the vitality of children seemed to increase anew. As to the influence of the combined age of parents, the results went to prove that old men ought not to marry young women.

MR. F. GALTON read a paper on the subject of "Finger-prints as a Means of Personal Identification," showing the degree of facility by which it was possible to determine whether the duplicate of a submitted set of impressions was or was not contained in a catalogued collection of the finger-prints of different persons, say of criminals. The prints used were those of the bulbs of the ten digits, and in each there were on the average at least twenty distinct points of reference, so that a degree of certainty in identification far exceeding that by any other method could rapidly be obtained.

At the conclusion of the Congress, the degree of Doc-

tor of Laws was conferred by the University of Cambridge upon Professor Brouardel, of France; Professor Conradi, of Italy, and Professor von Fodor, of Hungary. It was decided to hold the next Congress in 1894 at Budapesth.

SECOND CONGRESS OF TUBERCULOSIS.

Held in Paris from July 27 to August 2, 1891.

(Continued from p. 281.)

DR. CH. LEROUX, of Paris, presented a communication on the "Therapeutic Results Obtained in the Treatment of Tuberculosis in Sanitariums and Hospitals." Of 4692 patients treated from 1869 to 1882, at the Marine Hospital for tuberculous patients, the proportion of cures has been 70.7 per cent. At Banyuls, of 146 patients there were 118 cures, 12 ameliorated, and 6 deaths. At Cannes, of 51 cases of scrofulo-tuberculosis treated in six seasons there were 38 cures, 6 ameliorations, and 2 deaths; in 2 the condition remained stationary. Leroux believes that the result is in direct relation to the length of time spent at the sea-shore. All tuberculous patients cannot adopt the sea-shore treatment. For scrofulo-tuberculosis, the sea-shore treatment is necessary, and Leroux even thinks that it would be desirable to send all debilitated or predisposed subjects to the sea-shore, without waiting for the disease to manifest itself. The contra-indications are painful tuberculosis, aggravated Pott's disease, and lupus, while an absolute contra-indication is pulmonary or visceral tuberculosis.

DR. VIDAL, of Hyères, maintained that short treatments are preferable to long treatments, for after a while a child ceases to derive any benefit from a stay at the sea-shore; he prefers to have them go often and stay but a short time.

DR. DUBRANDY, of Hyères, highly recommended nocturnal ventilation of the patient's room, as an important factor in the treatment of tuberculosis; any system that will permit the entrance of fresh air into the room is a good one, but the currents of air should always be broken by the shutters, which should be closed; small openings left at the upper and lower parts of the window are sufficient for good ventilation. Curtains may be drawn over the windows while these are partially opened; this will avoid draughts.

When there is a strong wind, storm, or much rain, the windows should be tightly closed. When the windows are opened the temperature of the room remains almost unchanged; the variations in the external temperature do not materially influence the temperature of the room, because depression of temperature is compensated for by heat-radiation from the walls, furniture, the temperature of the patient, and above all the temperature of the expired air. 11° C. (51.8° F.) is a safe temperature to be maintained in the sick-room during the winter, and this can readily be accomplished by a small fire.

DR. SABOURIN, of Vernet les Bains, stated that he found that nine-tenths of phthisical patients do much better on dry and cold winter days than during mild weather; at Vernet les Bains patients are all placed in a veranda having a large number of windows, and provided with sofas and woollen covers, with hot bottles for their feet and woollen coverings for their shoulders; but they are not exposed to the rays of the sun. On re-

turning to their rooms the windows, which have been opened all day, are kept partially opened; this mode of life is followed for from three to six months; the treatment has been carried on even when the temperature fell to -6° and -7° C. (19-21° F.). Under such treatment the appetite returns and all the other symptoms are reduced to a minimum.

DR. POIRIER presented a communication on the "Incision of Pulmonary Cavities."

The more recent collected operations of this kind include 29 incisions of tuberculous cavities with excision of ribs, followed in 15 cases by amelioration, in 4 by cure, and in 9 by negative results, and in 1 by an unknown result. The steps in the operation are: With the thermo-cautery make an incision 4 cm. below the sterno-costal notch, 9 cm. long from mid-sternum outward, and parallel with the first intercostal space. Reaching the pleura, if no adhesions are present it is better to wait than to go any further, but if there be a tuberculous pulmonary cavity, adhesions are always present, and through these adhesions, after having incised the pulmonary tissue, it is easy to reach the cavities. As the tuberculous cavities almost always occupy the upper part of the lung, by opening through the first intercostal space the operator finds himself on a level below the cavity; to reach the latter his incision must be carried from below upward and from before backward. To reach cavities in the posterior part of the lung a similar method can be used: the spinal process of the seventh cervical vertebra must be found, and from this point an incision is made along the scapula, the trapezius and rhomboid muscles being cut through, and the first intercostal space reached; though this is much smaller than in front, excision of a rib is not to be recommended, since anteriorly it is quite unnecessary.

PROFESSOR BABES presented a communication on "The Action of Certain Chemical Substances Produced by the Tubercle Bacillus." He conducted his researches on the same lines as those followed by Koch; he endeavored to isolate vaccinal substances by precipitating filtered cultures with alcohol. The precipitates, however, contain many foreign substances, such as albumose derived from the culture-medium. Babes observed a close analogy between bird-tuberculosis and human tuberculosis. Cornil and Babes have considered bird-tuberculosis as not pathogenic in man; for this reason they have employed the bacillus of bird-tuberculosis as a point of departure for their researches. A concentrated glycerin extract or an alcoholic precipitate of cultures of this microbe have the same thermogenic action in guinea-pigs and rabbits as does tuberculin. As to tuberculin, they have found that precipitation with alcohol lowers the thermic and toxic action, which lowering is still more pronounced if the alcoholic precipitate be extracted with chloroform and ether. In this manner, as indicated by Klebs, one obtains for human tuberculosis a substance that is not dangerous, even in large doses; while, on the contrary, the substance soluble in chloroform is often extremely toxic, and even in small doses may kill inoculated guinea-pigs. On the other hand, hens and pigeons are resistant to large quantities of the remedy without a constant rise of temperature.

Of twenty-six hens inoculated with tuberculin, two presented acute bird-tuberculosis.

PROF. CHANTEMESSE, of Paris, and DR. LE DENTU presented an interesting communication on "Spontaneous Tuberculosis in the Dog." They demonstrated anatomical specimens from dogs showing in the liver and kidney lardaceous white masses of the volume of a hazel-nut having all the appearance of sarcomatous and carcinomatous tumors. Inoculations from these masses to dogs and guinea-pigs produced ordinary tuberculosis from a histological point of view. The masses consisted of an agglomeration of living and non-caseous embryonic cells, containing a large number of tubercle bacilli. This observation indicates that the dog does not possess a serum that confers immunity against tuberculosis, and that even outside of laboratory experiments the dog may contract the disease spontaneously, the lesion escaping identification on account of its resemblance to sarcoma and carcinoma.

DR. LÉLOIR presented a paper on "Experimental Inoculation of Lupus Vulgaris." Two hundred subcutaneous inoculations were made with negative results in guinea-pigs and rabbits. To obtain positive results in the rabbit, it is necessary to make inoculations into the anterior chamber of the eye, while in the guinea-pig it is necessary to make the inoculations into the peritoneal cavity. The result is an unmistakable tuberculosis, which, as it does not develop from subcutaneous inoculation, is not very virulent. This constitutes an important difference between lupus and ordinary tuberculosis, for in the latter, inoculation always gives rise to general tuberculosis. The small number of bacilli found in the lesion of lupus is related to the feeble virulence.

PROF. NOCARD stated that in scrofulosis the diseased tissues contain very few bacilli. Only after its transmission several times from the guinea-pig to the rabbit does the virus become more virulent, so as to be destructive of those animals.

PROF. ARLOING, who has made an especial study of surgical tuberculosis, has found a difference in the results obtained by subcutaneous injections of material from cases of surgical and cases of visceral tuberculosis. He questions differences of quantity, suggesting variations of quality. He believes that there are several varieties of surgical tuberculosis.

PROF. VERNEUIL held that the differences observed in inoculating tuberculous products can be attributed to the quantity of microbes or to the intensity of the poison.

PROF. CORNIL stated that one cannot always maintain that a certain fluid contains no tubercle bacilli, for spores, without bacilli, may be present.

DR. HUMBERT, of Paris, presented a communication on the "Surgical Treatment of Tuberculosis of the Testicle." So soon as the diagnosis is established, an opening is made with the thermo-cautery and all tuberculous structure is removed with the curette. In the great majority of cases castration is followed by a generalization of the tuberculosis, while it is well known that in most cases castration of one testicle for tuberculosis is followed by involvement of the other, necessitating double castration.

PROF. VERNEUIL stated that twenty years ago he condemned castration for tuberculosis of the testicle. Almost always, soon after the operation generalization of the tuberculosis occurs. In eighty cases of a hundred

one cannot expect to remove the bacillary focus, for if a rectal examination is made the prostate gland and seminal vesicles will be found to be tuberculous.

DR. PETIT read a note in the name of DR. TUFFIER, giving the history of four cases of tuberculous hydroceles, the liquid of which did not indicate the presence of the tubercle bacillus; its tuberculous nature was established by the development of tuberculosis in an inoculated guinea-pig.

MM. COURMONT and DOR, of Lyon, presented a communication on "Anti-tuberculous Vaccination with Soluble Products Obtained from the Bacillus of Bird-Tuberculosis." Liquid cultures of the bacillus of bird-tuberculosis, filtered through porcelain, were injected subcutaneously, intra-venously, and intra-peritoneally, into guinea-pigs and rabbits. The results obtained, so far as toxic effects are concerned, were negative when the filtered culture had been previously attenuated; toxic effects developed when the filtered culture was left virulent. In about 75 per cent. of inoculated rabbits infection was postponed, and instead of observing rapid death and the usual lesions, only well-formed tubercles were found; in about 25 per cent. of cases the influence of vaccination was still more apparent, animals surviving enormous doses of virus, those sacrificed several months after the injection presenting not a trace of tuberculous infection. In four cases rabbits that had resisted bird-tuberculosis were inoculated seven months later with a very virulent form of human tuberculosis, and presented no sign of the disease. Guinea-pigs can only be satisfactorily vaccinated by intra-venous inoculation, but, on the other hand, they are much more sensitive to the toxic action of the vaccine employed.

DR. MARFAN, of Paris, presented a communication upon "New Researches on the Gastric Disturbances and Lesions Encountered in Pulmonary Tuberculosis." He makes three classes of the disease: 1st, the common dyspepsia of phthisical patients; 2, the initial forms of this dyspepsia; 3, the terminal gastritis.

Under the head of common dyspepsia we find a series of disturbances, such as a diminution in the appetite, fetid or acid gastric eructations following the taking of food; gastric cough, from food coming in contact with the gastric mucous membrane, and finally vomiting; the vomiting and gastric cough are attributed to abnormal irritability of the pneumogastric nerve. The other gastric symptoms are dependent upon enfeeblement of the muscular coats of the stomach and dilatation of the organ; or to a diluted gastric juice, with or without putrid fermentations. The weakened condition of the motor power and of the gastric juice is ascribed to a poisoning of the walls of the stomach by tuberculous toxins; hence, phthisical dyspepsia is a toxic dyspepsia. In most cases the ordinary dyspepsia appears at once and develops with the phenomenon that announces a pulmonary localization soon afterward. In other cases the appearance of the dyspepsia is preceded by gastric symptoms of different origin, clinically characterized by more or less intense gastralgia, and chemically by a hyper-secretion and hyper-acidity of the gastric juice. This condition is often observed before the development of the tuberculous lesion and corresponds to what has been called pre-tuberculous dyspepsia. This is always accompanied by gastric dilatation, but is inconstant and

does not last long after pulmonary tuberculosis has really manifested itself, as it is replaced by a state of hypo-secretion and hypo-acidity of the common form of dyspepsia.

During the last stage of the disease, when large cavities are found in the lungs, new symptoms related to the digestive tract appear, indicating the development of gastritis. The phenomena that characterize this particular gastritis are: a bright-red tongue, of glazed appearance, deprived of its superficial layer of epithelium, as observed after scarlet fever; in addition, profound anorexia is present, and persistent diarrhea dependent upon the coexistence of intestinal lesions. This gastritis is probably due to a tuberculous intoxication, in addition to toxic infection so frequently observed in the last stages of pulmonary phthisis.

It is difficult to formulate the treatment to be recommended for such patients. The vomiting necessitates the use of the local anesthetics, among which may be placed creasote in dilute solution, cocaine, menthol, carbolic acid, or chloroform-water.

CORRESPONDENCE.

PARIS.

WHILE at Salzburg I was struck by the fact of the large number of people suffering with goiter, those affected being chiefly women. I believe it has been ascertained that in a considerable number of cases of removal of the enlarged thyroid, mental disease follows, and hence operators of most experience are trying whether this danger may be averted by employing only partial extirpation. The question naturally suggests itself whether removal of the uterine appendages may not also be followed in many cases by similar disease. Certainly, if collected, the statistics of these operations are sufficiently numerous to give light upon this subject. Auvard, the only professional acquaintance that I have met in Paris—the few others that I know being absent upon their summer vacation—tells me that this operation is too frequently done in that city, and I think a similar belief as to its being too often done in our own country prevails with the majority of the profession in the United States. In reply to my question as to operations for pyosalpinx being so frequent in Paris, so few in Germany—in the latter I have seen but one in more than thirty abdominal sections—he stated that both septic and specific inflammation of the tubes were much more common in France than in Germany. The reason for the greater frequency of the latter was clandestine prostitution and of the former the common neglect of proper antiseptic precautions by the French midwife, while these were strictly observed by the German.

Auvard showed me two operations—one an amputation of the vaginal cervix for retroflexion (the uterus was hypertrophied, and involution would follow, with probable restoration of the organ to its normal position); the other dilatation, curetting, and application of an iron solution for a bleeding fibroid. The last operation was the same that I had previously seen Winckel do, and illustrated a corresponding, wise conservatism. The lesson is plain: Never resort to a grave operation until milder means have proved useless. For vaginal pack-

ing he employs a gauze prepared with salol, spermaceti, and glycerin; certainly, it makes an admirable tampon, the best I have seen.

In two months his work on *Diseases of Women* will be issued, and those familiar with his treatise upon obstetrics as well as with his volumes of obstetric contributions, will look forward with pleasure to its appearance. Pozzi's work on the same subject issued last year was too large, too diffuse, and its most valuable portions seem to me to be more the teaching of Berlin than that of Paris.

After the operation Dr. Auvard was kind enough to take me to Salpêtrière, at which it was expected Térillon's assistant (Térillon himself being absent from the city) would do a hysterectomy for a rapidly-growing supposed myoma; abdominal section had been done some time before for, I believe, an ovarian tumor. The moment the abdominal cavity was opened considerable bloody serum escaped, and then there was quite a free hemorrhage. It was found impossible to remove the growth, the malignancy of which could not be doubted, and so the wound was closed, considerable iodoform gauze being pressed down toward the bleeding part and a portion of it left projecting externally, drainage thus being certainly secured and possible hemostasis promoted. I think the patient died within twenty-four hours. Following this the same operator performed a colotomy. The patient had a malignant tumor of the ovary; this had been removed, but the disease reappeared, and obstruction of the bowel followed, for which an opening had been made in the descending colon. The disease still extending, it was thought advisable to open the transverse colon, and the preparation for such opening I witnessed—that is, the abdominal incision and stitching the intestine to the abdominal wall, the opening of the intestine being deferred until adhesion had occurred. The point of greatest interest to me in the operation was that the administration of an anesthetic was believed to be contra-indicated, lest the possible straining and vomiting resulting therefrom would rupture adhesions or previous abdominal incisions; the sensibility was lessened, but by no means abolished, by the hypodermatic injection of a two per cent. solution of cocaine at four different points along the line to be incised. While the incision caused only slight suffering, the suturing of the intestine to the abdominal wall caused considerable, but not when the needle was passed through the walls of the bowel—only when the needle passed through the parietes of the abdomen.

Dr. James Henry Bennet, one of the pioneers in the local treatment of uterine diseases, has just passed away, at the age of seventy-five. So too, comparatively recently, two famous German teachers, whose contributions to obstetrics and gynecology were more important—Scanzoni, who was seventy years old, and Braun—have gone over to the majority. Great as these men were, it is vain to speak of their loss as irreparable. As the old Italian proverb has it, "With or without the cock crowing, God makes the day;" and so medicine goes on independently of the departure of individuals.

I found, when in Berlin, considerable interest in the question as to who was to be Braun's successor. When a vacancy occurs in any of the medical schools of the German Universities, the faculty present three names to

the Minister of Public Instruction, who makes the selection. Schauta, Pawlik—the third I cannot now recall—were the names proposed for Braun's place. When in Munich I learned that Schauta had been chosen, and I believe the choice is generally commended, though many would have been delighted to see that brilliant teacher and operator and genial gentleman, Pawlik, successful.

The question has suggested itself whether a somewhat similar plan might not be wisely employed in filling vacancies in our own medical schools.

But, returning from this digression, the best aseptic operating table I have ever seen was that employed by Auvard, and several similar ones by the same manufacturer, the celebrated surgical instrument-maker of Paris, Mathieu. These tables are made of steel and German silver, and are nickel-plated. Considering their material, they are not very heavy. One of the forms that Mathieu makes can be folded up and thus readily taken to the house in which an operation is to be done; another is so constructed that it may be made to revolve vertically through about one-fourth of a circle, and thus permit of instant lowering of the head in case of threatened danger from anesthesia, or, on the other hand, an elevation of the hips, so that really the Trendelenburg position is given.

By the way, the watchfulness against the danger just mentioned was shown in all of several cases that I have seen here, by the anesthetizer applying forceps to the tongue, the instrument remaining, causing partial extrusion, until the operation is over; it is hardly necessary to state that on the Continent chloroform seems the only anesthetic used.

Mathieu told me that he intended going to the Chicago Exposition and making an exhibit of instruments. I am confident that the profession will take great interest in such an exhibit. Incidentally it may be stated that the table to which I have referred costs six hundred francs (\$120), irrespective of form; there are at least half a dozen patterns. It would be a good thing if every operating hospital in our country had one; there is nothing better for securing perfect cleanliness.

In regard to foreign professional visitors to Chicago, probably the number will be greater than most anticipate. More than one gentleman in Berlin told me that he was coming. It must be remembered that I met very few physicians there, except those especially devoted to obstetrics and diseases of women. Dr. Auvard is coming, and, like others, he is desirous of making his visit at the time when some of our national medical societies shall be in session, in order that he may meet as many of the profession, or at least as many of those that are engaged in his special department, as possible. Ought not the profession of the United States to take measures to secure the realization of such desire?

Herewith I conclude these hurriedly-written letters from abroad. During my visit I have seen much that was interesting, instructive, and useful to me. If through my eyes others are enabled to see anything that in even a slight degree may be useful, my labor is not in vain.

The visitor to the Mozart Museum in Salzburg will find in a glass case amid a number of the relics of the great musical composer, such as letters, jewels, miniatures painted on ivory, etc., a paper marked, in the printing of

more than a century ago, "Court Plaster." This Mozart got when visiting England some years before 1800. It may be that this letter will be no more among the treasures of THE MEDICAL NEWS than that paper of "court plaster" is in the Mozart collection; but still the one, like the other, may help to close a gap, and none will gape at its close.

T. P.

SELF-RETAINING PALATE RETRACTOR.

To the Editor of THE MEDICAL NEWS,

SIR: Permit me to say that the illustration of the palate retractor, published in your issue of September 5th, utterly failed to convey a proper idea of my instrument. By some misconception the wood-cut furnished you by my instrument-maker, and which I did not see, was not a representation of my modification, as may readily be discerned by a perusal of the article. I hope at an early day to have an accurate illustration of the instrument reproduced.

T. H. WEAGLY.

MARION, PA.

NEWS ITEMS.

The American Neurological Association will hold its seventeenth annual meeting at Washington, D. C., September 22, 23, and 24, 1891.

The following program has been formulated:

Tuesday, September 22d. Address by the President, Dr. Wharton Sinkler, of Philadelphia.

A Case of Acute Spinal Paralysis: Death on the Twelfth Day, with the Account of the Microscopic Examination made by Dr. C. W. Burr, by Dr. Wharton Sinkler, of Philadelphia.

Polio-myelitis Acuta Adultorum, by Dr. William C. Kraus, of Buffalo.

A Contribution to the Therapeutics of Polio-myelitis, by Dr. V. P. Gibney, of New York.

Syphilis of the Spinal Cord, by Dr. Philip Zenner, of Cincinnati.

The Virile Reflex in Relation to Clinical and Forensic Neurology, by Dr. C. C. Hughes, of St. Louis.

Lead-poisoning with Special Reference to the Spinal Cord and to Peripheral Nerve Lesions, by Dr. E. D. Fisher, of New York.

A Case of Tumor of the Cerebellum in which Trephining was Done for the Relief of Pressure, by Dr. Philip Coombs Knapp, of Boston.

During the Meeting, Dr. William C. Kraus, of Buffalo, will exhibit a Neuro-topographical Bust.

Wednesday, September 23d. Gunshot Wound of the Left Cuneus with Complete Right Homonymous Hemianopsia, by Dr. J. T. Eskridge, of Denver.

A Case of Trephining and Excision of the Cortex for Jacksonian Epilepsy, by Dr. W. W. Keen and Dr. Charles K. Mills, of Philadelphia.

Five Recent Cases of Brain Surgery, by Dr. William A. Hammond, of Washington.

Astasia-abasia, by Dr. Philip Coombs Knapp, of Boston.

Tuberculous Infection of the Central Nervous System, by Dr. B. Sachs, of New York.

Subcortical Hemorrhagic Cyst Beneath the Arm and Leg Areas, with Remarks on the Diagnosis of Lesions

of the Motor Subcortex, by Dr. C. K. Mills, of Philadelphia.

The Diagnosis of Certain Forms of Intra-cranial Syphilis, by Dr. Landon Carter Gray, of New York.

1. A Case of Tumor of the Mesencephalon with Exhibition of the Brain; 2. A Case of Tumor of the Brain with Focal Epilepsy, by Dr. James Hendrie Lloyd, of Philadelphia.

The Electro-physiology of Reflexes, with the Description of a Hitherto Unknown Localized Physiological Phenomenon, by Dr. G. W. Jacoby, of New York.

Thursday, September 24th. Triple Personality, by Dr. Irving C. Rosse, of Washington.

A Case of Porencephalus in which Trephining was Done for the Relief of Local Symptoms. Death from Scarlet Fever. Exhibition of the Specimen, by Dr. De Forrest Willard and Dr. James Hendrie Lloyd, of Philadelphia.

Double Athetosis, by Dr. William Osler, of Baltimore.

1. A Case of Thomsen's Disease; 2. Removal of a Neuroma, Followed by Disappearance of Local Anesthesia of Fourteen Years' Standing, by Dr. G. L. Walton, of Boston.

Facial Hemi-hypertrophy, by Dr. William A. Hammond, of Washington, D. C.

Lithemia Considered in its Relation to Nervous Phenomena, by Dr. C. Eugene Riggs, of St. Paul.

Friedreich's Disease: Its Relation to Conducting Paths in the Cord, by Dr. David Inglis, of Detroit.

Fracture of the Eleventh Costal Spine, Followed by Injury of the Spinal and Sympathetic Nerve-supply of the Bowel in the Region of the Ileo-cecal Valve. Intestinal Hemorrhage and Death on the Seventh Day, by Dr. J. T. Eskridge, of Denver.

A Case of Unilateral Paralysis of the Lips, Tongue, and Pharynx, with the Presentation of Specimens, by Dr. G. M. Hammond, of New York.

The Fourth Annual Session of the Association of American Anatomists will be held at Washington, September 23, 24, and 25, 1891.

The following program has been arranged:

Wednesday, September 23d. The Fundamental Principles of Anatomical Nomenclature, by Dr. Burt G. Wilder, of Cornell University.

The Systematic Use of the Eye in Teaching Anatomy; Accompanied by a Demonstration of a Brain Model, by Dr. William P. Carr, of Washington.

Some Impressions on the Teaching of Anatomy to Medical Students, by Dr. Harrison Allen, of Philadelphia. Discussion to be opened by Dr. Dwight, followed by Dr. Baker.

The Fossa Prenasalis, by Dr. Thomas Dwight, of Harvard University.

Notes on the Hearts of Certain Animals, by Dr. Ida Hyde, of Chicago. To be read by Dr. S. V. Clevenger, of Chicago.

Thursday, September 24th. Recent Fissural Diagrams, by Dr. Burt G. Wilder, of Cornell University.

The Arrangement of the Supra-cerebral Veins in Man, as bearing on Hill's Theory of Developmental Rotation of the Brain, by Dr. William Browning, of Brooklyn.

Morphological Importance of the Membranous or

Other Thin Portions of the Parietes of the Encephalic Cavities, by Dr. Burt G. Wilder, of Cornell University.

The Alleged Lateral Orifices, Communications of the Fourth Ventricle with the Subarachnoid Space: Are They Natural? by Dr. Burt G. Wilder, of Cornell University. Being a reply to part of Dr. F. W. Langdon's paper, "Homology of the Cerebro-spinal Arachnoid with the other Serous Membranes."

The Structure of Basis and Cement Substance, by Dr. Charles Heitzmann, of New York.

Serial Fetal Sections: Specimens and Remarks, by Dr. W. W. Gray, of Washington.

The Teeth of the Chiroptera, by Dr. Harrison Allen, of Philadelphia.

Specimens of Supernumerary Digits in Man and the Pig, by Dr. F. J. Shepherd, of Montreal.

The Relative Frequency of the Psoas Parvus Muscle in the Colored Race, by Dr. E. A. Balloch, of Washington.

Friday, September 25th. Certain Modifications in Plant Morphology, Produced by External Conditions, by Dr. W. P. Wilson, of Philadelphia.

Comparative Osteology of the North American Pygopodes, by Dr. R. W. Shufeldt, of Washington.

The Supra-condyloid Process in Man, by Dr. D. S. Lamb, of Washington.

Platycnemic Tibias, by Dr. Frank Baker, of Washington.

History of Anatomy as a Science, by Dr. G. W. West, of Washington.

Congenital Union of the Quadratus Jugal to the Mandible in a Cockatoo: Specimen and Remarks, by Mr. Fred. A. Lucas, of Washington.

Homologies of the Principal Bones, by Mr. Fred. A. Lucas, of Washington.

Several other papers are expected; one from Prof. E. D. Cope, of Philadelphia; another from Dr. T. N. Gill, of Washington. Prof. D. J. Cunningham, of Dublin, will be present, and is expected to read a paper or make remarks on some subject.

The American Pediatric Society will hold its third annual meeting at Washington, September 22, 23, 24, and 25, 1891.

TUESDAY, SEPTEMBER 22, 8 P.M.

Address of the President.

How to Prevent Complications and Sequelæ in Scarlet Fever, by Dr. J. Lewis Smith, of New York.

Discussion on the Diagnosis of Pneumonia in Infancy and Early Childhood.

(1) The most diagnostic symptoms of the Early Stage of Lobar Pneumonia and the differential diagnosis from such diseases as Meningitis, Malaria, Scarlet Fever, etc., by Dr. T. S. Latimer, of Baltimore.

(2) The diagnosis of Consolidation of the Lung from Effusion (serous or purulent) and the differential diagnosis between Lobar Pneumonia and Broncho-pneumonia, by Dr. F. Forchheimer, of Cincinnati.

(3) The diagnosis of Broncho-pneumonia (acute and chronic) from Tuberculosis, by Dr. William Osler, of Baltimore.

(4) The diagnosis of Broncho-pneumonia from Bronchitis, also the Temperature Range in Acute Pneumonia,

both Lobular and Lobar, by Dr. L. Emmett Holt, of New York.

(5) Remarks by Dr. A. Jacobi, of New York, and by Dr. W. P. Northrup, of New York.

(6) General Discussion.

WEDNESDAY, SEPTEMBER 23, 11 A.M.—2 P.M.

Demonstrations.

(1) A Specimen of Congenital Heart Disease, by Dr. William Osler, of Baltimore.

Manifestations of "La Grippe" in Children, by Dr. Charles Warrington Earle, of Chicago.

The Treatment of Laryngeal Diphtheria by Calomel Sublimations, by Dr. Dillon Brown, of New York.

Further Report on Submembranous Local Treatment in Pharyngeal Diphtheria, by Dr. A. Seibert, of New York.

A Case of Ulcerative Catarrhal Dysentery, by Dr. W. D. Booker, of Baltimore.

Stricture of the Esophagus occurring in Children, with Report of a Case, by Dr. F. E. Waxham, of Chicago.

A Case of Pulmonary Abscess—operation and recovery, with Remarks, by Dr. Francis Huber, of New York.

THURSDAY, SEPTEMBER 24, 9 A.M.—2 P.M.

Demonstrations.

(1) Exhibition of Laryngeal Tubes for the Performance of Forcible Respiration, by Dr. J. O'Dwyer, of New York.

A Study of Fifty Cases of Chorea, by Dr. Samuel S. Adams, of Washington.

A Study of One Hundred and Forty Cases of Heart Disease in Children, (by invitation) by Dr. Floyd M. Crandall, of New York.

Dysentery in a Boy of Eleven Years—presence of *Amœba Coli*, by Dr. H. Lafleur, of Philadelphia.

Scorbutus in Children, by Dr. W. P. Northrup, of New York.

Chronic Nephritis in Children, by Dr. Henry Jackson, of Boston.

Two Cases of Acute Primary Nephritis in Infants, by Dr. L. Emmett Holt, of New York.

Scarlatinal Nephritis in Children, by Dr. J. Lewis Smith, of New York.

The Application of Gavage in the Treatment of Uncontrollable Vomiting in Infants (by invitation), by Dr. Charles G. Kerley, of New York.

The Association of Congenital Wry-neck and Facial Hemiatrophy, by Dr. William Osler, of Baltimore.

Tuberculous Ostitis of the Hip, originating in Colorado, by Dr. John M. Keating, of Philadelphia.

A Case of Slow Heart in an Infant terminating in Fatal Syncope, by Dr. A. D. Blackader, of Montreal.

FRIDAY, SEPTEMBER 25, 9 A.M.—1 P.M.

The Etiology of Stomatitis Aphthosa, by Dr. F. Forchheimer, of Cincinnati.

Perityphlitis in the Young, by Dr. J. Henry Fruitnight, of New York.

Intussusception, by Dr. L. Emmett Holt, of New York.

A Case of Congenital Cretinism, by Dr. C. W. Townsend, of Boston.

A Further Contribution to Cirrhosis of the Liver in

Childhood, with Post-mortem Notes and Microscopic Studies, by Dr. W. A. Edwards, of San Diego, California, and Dr. W. M. Gray, Microscopist, Army Medical Museum, Washington, D. C.

Female Physicians in Portugal.—Last year a woman was for the first time admitted to the medical profession in Portugal. This year four others have taken medical degrees.

BOOKS AND PAMPHLETS RECEIVED.

Index Catalogue of the Library of the Surgeon-General's Office, U. S. A. Authors and Subjects—Vol. XII.: *Reger-Shuttleworth*. Washington: Government Printing Office, 1891.

Regional Anatomy in its Relation to Medicine and Surgery. By George McClellan, M.D. Illustrated from photographs, taken by the author, of his own dissections, expressly designed and prepared for this work, and colored by him after Nature. In two volumes. Vol. I. Philadelphia: J. B. Lippincott Company, 1891.

Addresses, Papers, and Discussions in the Section of Obstetrics and Diseases of Women at the Forty-second Annual Meeting of the American Medical Association, at Washington, D. C., March 5-8, 1891. Chicago: Printed at the Office of the Association, 1891.

Ninth Annual Announcement of the Philadelphia Polyclinic and College for Graduates in Medicine, 1891.

With What Shall We Vaccinate? By Samuel Wolfe, M.D. Reprint.

Therapeutics of Diphtheria. By Dr. Joseph Burghardt. Translation, 1891.

Chorea in Relation to Climate, Especially the Climate of Colorado. By J. T. Eskridge, M.D. Reprint, 1891.

Laparo-hysterorrhaphy as a Means of Cure of Cases of Extreme Prolapse, or Retro-displacements of the Uterus. By W. J. Asdale, M.D. Reprint, 1891.

Contributions from the Chemical Laboratory of the Woman's Medical College of Pennsylvania. By Emma L. Billstein, Class of 1892.

The Influence of Alcohol on Proteid Metabolism. By R. H. Chittenden. Reprint, 1891.

A Study of Aërotherapeutics. By Samuel S. Wallian, A.M., M.D. Reprint, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 8 TO SEPTEMBER 14, 1891.

HUNTINGTON, DAVID L., *Surgeon*.—The leave of absence granted is extended to include September 30, 1891.

HEIZMANN, CHARLES L., *Surgeon*.—Is relieved from duty at Fort Clark, Texas, and ordered to Fort Douglas, Utah Territory, relieving William D. Wolverton, *Surgeon*, who, upon being relieved, will proceed to Fort Schuyler, New York, and report for duty at that station.

DAVID L. HUNTINGTON, *Surgeon*; HENRY MCELDERRY, *Surgeon*; WALTER REED, *Assistant Surgeon*; and CHARLES M. GANDY, *Assistant Surgeon*, are appointed members of a Board of Medical Officers, to meet in New York City, October 1, 1891, for Examination of Candidates for Admission into the Medical Corps of the Army.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 12, 1891.

WELLS, HOWARD, *Surgeon*.—Ordered to special duty in fitting out the new Naval Hospital at Portsmouth, N. H.

HALL, JOHN H., *Surgeon*.—Ordered before the Retiring Board, September 19th.

ROSS, JOHN W., *Surgeon*.—Ordered, in connection with present duty, as a member of the Board on Labor Employment.